

FINAL

ENVIRONMENTAL ASSESSMENT OF AMENDMENT 14
TO THE FISHERY MANAGEMENT PLAN FOR
GROUNDFISH OF THE GULF OF ALASKA

ADOPTED BY
THE NORTH PACIFIC FISHERY MANAGEMENT COUNCIL

PREPARED BY THE PLAN TEAM FOR
GROUNDFISH OF THE GULF OF ALASKA

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I. INTRODUCTION

The domestic and foreign groundfish fishery in the 3-200 mile fishery conservation zone of the Gulf of Alaska is managed under the Fishery Management Plan for Groundfish of the Gulf of Alaska (FMP). This FMP was developed by the North Pacific Fishery Management Council (Council), approved by the Assistant Administrator for Fisheries, NOAA (Assistant Administrator), on February 24, 1978, and implemented by a final rule December 1, 1979 (43 FR 52709, November 14, 1978). A final environmental impact statement was prepared for the FMP and is on file with the Environmental Protection Agency. Since that time, the Council has adopted thirteen amendments to the FMP. Twelve amendments have been implemented by the Secretary of Commerce. The subject of this action is DRAFT Amendment 14. It contains seven proposals, which are described below.

Prior to 1984, the Council would receive amendment proposals during any of its scheduled meetings. At its April, 1984 meeting, the Council adopted a policy whereby proposals for amendments would be received only once a year. Proposals contained in Amendment 14 were requested by the Council in September 1984 with a deadline set at December 7, 1984. By the deadline, over thirty proposals were submitted to the Council, who then instructed its Plan Team to review and rank each proposal. At its February and March 1985 meetings, the Council reviewed the recommendations of the Plan Team, Scientific and Statistical Committee, and Advisory Panel, and selected seven proposals for inclusion in Amendment 14. Other proposals were identified for development and consideration in a future amendment.

The seven topics to be reviewed in this environmental assessment are: (1) sablefish gear regulation; (2) rockfish quotas and management areas; (3) establish a reporting system for catcher/processor vessels; (4) changes in OY values; (5) halibut prohibited species catch limits (PSC) on domestic trawlers; (6) implementation of NMFS habitat policy; and (7) sablefish fishing seasons. Each of these topics will be presented as chapters of this document.

This environmental assessment is prepared under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and its implementing regulations.

II. DESCRIPTION OF AND THE NEED FOR EACH AMENDMENT PROPOSAL

A description of, and the need for, each amendment proposal follows:

1. Establish a Gear and/or Area Restriction in the Sablefish Fishery

Current regulations implementing the FMP do not constrain types of gear used in harvesting any of the groundfish categories, with the exception of a temporary emergency rule for sablefish which restricts the gear used in the Eastern Regulatory Area to hook and longline only. All of the proposed alternatives would entail long-term changes to one or more areas of the Gulf of Alaska and may affect three other potential gear types, besides longlines.

The commercial harvest of sablefish in the Gulf of Alaska began in Southeast Alaska in 1906. Domestic landings grew to a peak in 1946 when about 4,083 mt, dressed weight, was landed. Harvest levels began to decline initially after 1946 in response to a poor market and then in response to foreign competition and poor stock conditions, reaching a minimum in 1968 when 161 mt were landed. During the 1960s foreign harvest of sablefish soon grew to a high of 36,000 mt. Since 1972, the foreign harvests have declined as a result of declining stock conditions and regulation under the FMP.

With the implementation of the Magnuson Fishery Conservation and Management Act (MFCMA) in 1976, fishery managers have encouraged domestic development of fishery resources. In terms of sablefish, the Alaska fishing industry has responded by expanding quickly, creating jobs for hundreds of fishermen, and providing economic growth to Alaskan and Pacific northwest fishing communities. The challenge to develop the sablefish resource was taken by fishermen using principally longline gear.

Most U.S. fishermen operating in Alaska have chosen longlines as the primary gear when targeting on sablefish, because many of them are experienced in the halibut fishery which is executed strictly with hook and longline and own vessels best suited to fishing that gear type.

Pots have been used periodically since the mid-1970s. In 1973, 42% of the domestic harvest, or 38 mt, was taken by one pot fishing vessel. Since then, no more than six pot vessels have fished in the Gulf during any one season. Since 1973, longline fishermen have dominated this fishery with as many as 200 vessels participating in 1984. Directed fishing for sablefish using trawl and gillnets has been minimal to date.

In 1982, the sablefish optimum yield (OY) was fully achieved by U.S. fishermen in the Southeast Outside District (i.e. westward to the longitude of 137°W.). The OY was again achieved in this district in 1983 and further west to 140°W. (East Yakutat District). In 1984, the OY was reached for the first time throughout the entire Gulf of Alaska. Marking this achievement was a fully capitalized fishing fleet, a large harvesting and processing workforce, increased markets, and the realization that there would be insufficient sablefish resource to accommodate all users at traditional levels.

This fact became apparent in the first two months of 1985 off Southeast Alaska. Historically due to regulation, the Southeast Alaska sablefish fishery has not begun until spring when weather and fishing conditions improve until May 1 and the fish have recovered from spawning. In January 1985 three large (catcher/processor) vessels began fishing for sablefish using pot gear. The pots, as with longline gear, are set on a relatively narrow depth range (250-500f). Fishing has been good and it has been projected that the pot vessel catch will exceed 850 mt, or about one-third of the combined Southeast-East Yakutat District OY. As vessels left the area to unload their catch, pots would often be stored on the grounds predatory use by other gear types.

While the pot vessels were fishing there were several gear conflicts between the pot fishermen and those using longline gear. When longline gear, which is relatively lightweight, becomes entangled with the heavier pot gear, the longline breaks with some or all of it being lost. Gear conflicts are likely

between these two gear types since fishing is concentrated along the narrow shelf edge. The presence of just one or two pot vessels can effectively preempt the grounds to longline gear as longline fishermen are forced to move to avoid gear loss. Pots lost or stored on the fishing grounds can contribute to this problem over a long period of time.

2. Rockfish Quotas and Management Areas

"Other rockfish" as defined in the FMP, includes all species of Sebastes other than Pacific ocean perch and four associated slope rockfish species. Other rockfish are currently managed in the FMP with a Gulfwide OY. The MSY for this complex was based on the incidental catch of slope rockfish in the foreign trawl fishery for Pacific Ocean perch between 1973 and 1976 with OY set at the lower end of the MSY range.

In November 1984 the Alaska Department of Fish and Game (ADF&G) submitted to the Groundfish Team a report on the rapidly expanding domestic fishery for bottom-dwelling (demersal) shelf rockfish in the Southeastern area. That report pointed out that this fishery is targeting on a species complex that has not previously been addressed in the groundfish FMP. This fishery has grown in recent years from less than 45 mt (dressed weight) in 1970 to nearly 400 mt in 1983. The round weight catch for 1984 doubled to approximately 800 mt.

The domestic fishery targets on benthic forms of shelf rockfish in depths of less than 100 fathoms. Over 20 species of rockfish are regularly landed. Predominant species are yelloweye rockfish (S. ruberrimus), canary rockfish (S. pinniger), tiger rockfish (S. nigrocinctus), and rosethorn rockfish (S. helvomaculatus) in the 40-100 fathom depth zone and quillback rock fish (S. maliger), china rockfish (S. nebulosus) and copper rockfish (S. caurinus) in depths of less than 40 fathoms. Yelloweye rockfish and quillback rockfish are the primary target species. Longline gear is the predominant gear type and accounts for well over 90% of the harvest.

Until recently it was assumed that the majority of the landings were from the waters within State jurisdiction. However, approximately 50% of the fishable grounds are within the Fishery Conservation Zone(FCZ). Based on fishermen interviews conducted by ADF&G in 1983 and 1984, approximately 25% of the landings were of catches taken only in the FCZ, 21% only within state waters, and the remaining 54% were taken on trips that fished areas both under state and under federal jurisdiction.

Aging studies conducted in recent years conclude that rockfish are much longer lived and slower growing than early literature suggests. Many of the demersal species live in excess of 50 years and many do not reach maturity until after age 10. Because rockfish are extremely long lived and slow growing, the sustainable yield that can be taken from a stock is much lower than for a comparable biomass of faster growing species such as pollock or cod. As a result, rockfish stocks can be easily and quickly overfished. Lacking information on appropriate harvest levels for the demersal shelf rockfish stocks in Southeastern Alaska, the risk of overharvesting this resource by the expanding target fishery is great.

After reviewing the ADF&G rockfish issue paper the Plan Team recommended in their November 1984 report to the Council that the other rockfish category should be redefined to include three separate assemblages or species groups; slope rockfish, shelf pelagic rockfish and shelf demersal rockfish. Species included in these groups are shown in Table 1. Further, the management of the shelf demersal category should be conducted in cooperation with the State of Alaska. The Team report also noted that, based on the poor showing in the 1984 trawl survey, there was no evidence that the slope complex could sustain a harvest greater than the 1984 harvest of 700 mt.

At the December meeting the Council acted to reduce the Gulfwide OY of "other rockfish" from 7,600 mt to 5,000 mt due to concern for the risk of overharvesting certain rockfish stocks. The 1984 harvest was approximately 1,500 mt of which approximately 700 mt were taken from the slope rockfish stocks by foreign and joint venture fisheries in the Central and Western Gulf management regions. The remaining 800 mt was taken from shelf rockfish stocks by domestic fishermen in the Southeastern area. In adopting the 5,000 mt OY, the Council considered the testimony of fishermen in the Central Gulf area who expressed a desire to expand potential nearshore fisheries in the Central Gulf into the FCZ. At the the joint Alaska Board of Fisheries (Board) and Council meeting in early February 1985, ADF&G staff presented alternative management proposals for establishing a separate management category of shelf rockfish stocks in order to reduce the risk of overharvesting demersal shelf rockfish and to eliminate the possibility of harvesting the entire Gulfwide OY in any one portion of the Gulf, consistent with the FMP objectives.

At the February joint meeting the Council deferred further discussion on rockfish management pending recommendations by the Board of Fisheries. Following the joint meeting the Board adopted the management alternatives which were developed by ADF&G staff and the Southeast Alaska fishing community and endorsed by the Council Advisory Panel. The recommended action would place a 600 mt OY on demersal shelf rockfish in both State outercoastal and FCZ waters between 56°N. latitude and 57°30'N. latitude. In addition, the Board voted to restrict harvest of other rockfish species in the remainder of the Southeast District to no more than 880 mt. That would place a total other rockfish OY of 1,480 mt in the outercoastal state and federal waters within the Southeast District. No more than 600 mt of demersal shelf rockfish could be harvested in the specified portion of the area where the fishery is currently concentrated. No management action was recommended by the Board for the remainder of the Gulf since the February Board meeting was advertised to address Southeastern groundfish issues only. In addition, the Board adopted an October 1 to September 30 accounting year for shelf demersal rockfish in the Southeastern area to assure that fish would be available to the fishermen during the fall and early winter when the market is strongest.

With the increasing effort in directed rockfish fisheries and the vulnerability of these species to overharvest, the risk of overfishing certain stocks is high. Therefore, management action is considered essential for other rockfish. There are several management alternatives that would reduce the risk of overharvest.

Table 1.--Categories of rockfish present in the Gulf of Alaska by habitat area.

Slope Category

POP
Northern rockfish
Rougheye rockfish
Shortraker rockfish
Sharpchin rockfish
Red banded rockfish
Rosethorn rockfish
Darkblotch rockfish
Redstripe rockfish
Splitnose rockfish
Harlequin rockfish
Aurora rockfish
Yelloweye rockfish

Shelf Demersal Category

Yelloweye rockfish
Quillback rockfish
Canary rockfish
China rockfish
Tiger rockfish
Rosethorn rockfish
Silvergray rockfish
Copper rockfish

Shelf Pelagic Category

Black rockfish
Dusky rockfish
Yellowtail rockfish
Widow rockfish
Boccacio
Blue rockfish

3. Implement New Optimum Yields for Pollock, Pacific Ocean Perch, Other Rockfish, Atka Mackerel, and Other Species

At its December 1984 meeting, the Council adopted changes in optimum yields for pollock (Western/Central Regulatory Area), Pacific ocean perch ((Western and Central Regulatory Areas), Atka mackerel (Central and Eastern Regulatory Areas), other rockfish (Gulfwide) and other species (Gulfwide). At the same meeting, the Council voted to request the Secretary of Commerce to implement these changes by emergency rule under Section 305(e) of the Magnuson Act. The Secretary did implement these changes on (Insert date of filing with the Office of Federal Register) (_FR, _____). Changes in optimum yields are based on the best available information. A summary of that information concerning the status of pollock, Pacific ocean perch (POP), rockfish, Atka mackerel, and other species follows:

Pollock - On the basis of acoustic surveys conducted in the Shelikof Strait region of the Gulf of Alaska during March and April, 1984, total pollock biomass is estimated to be between 1,574,634 mt and 2,034,857 mt with a mean estimate of 1,789,186 mt. This mean represents the total biomass in the Central and Western Regulatory Areas combined, since few pollock were found elsewhere in these areas while surveys were conducted in Shelikof Strait during the spawning period. Similar surveys have been conducted in Shelikof Strait during 1980, 1981, and 1983. Results of the 1984 survey indicate that total biomass continues to decrease from its peak level in 1982. Length and age composition and hydroacoustic survey data from 1984 joint venture fisheries confirm that the 1980 year class (age 4 fish) is weak. The 1981 year class (age 3 fish) also appears to be weak. The abundance estimate of age 3 fish in 1984 is about the same as age 3 fish (1980 year class) in 1983. It is estimated that the exploitable biomass of pollock has now declined from the 1984 level by some 500,000 mt to fall within a range of 1,200,000-1,270,000 mt. An acceptable exploitation rate of 28.5% would provide a harvest between 342,000 mt and 358,000 mt, with a mean of 350,000 mt. The Council and the SSC reviewed the Plan Team's concern that the majority of the 1985 harvest will come from the only two dominate year classes, 1978 and 1979, which are 7- and 6-year-old fish in the 1985 fishery. The Council chose, therefore, a more conservative exploitation rate of 24 percent times the upper limit of the exploitable biomass to establish an optimum yield of 305,000 mt, to recognize the dependency of the fishery on only two year classes and continuing poor recruitment.

Pacific ocean perch (five species complex) - Results of the triennial Gulf of Alaska biomass survey indicate the current exploitable biomass of the Pacific ocean perch complex are 53,400 mt, 120,150 mt, and 93,450 mt in the Western, Central, and Eastern Regulatory Areas, respectively. Respective EYs are 1,736 mt, 5,208 mt, and 4,530 mt. The Council considered the desirability of establishing optimum yields at levels that would provide only minimal bycatches incidental to other target fisheries in order to promote the quickest rebuilding of Pacific ocean perch stocks. Such minimal levels would prove a burdensome cost to developing domestic fisheries if their operations were terminated by prematurely achieving the bycatch optimal yields. The Council, therefore, established optimum yields at higher than bycatch levels, or 1,302 mt in the Western Area and 3,906 mt in the Central Area. It retained the existing 875 mt optimum yield in the Eastern Area to promote rapid stock rebuilding in this regulatory area.

Other Rockfish - This group contains about eight species of rockfish, excluding the POP complex, that occur along the continental slope and are taken incidental to other target fisheries. Results of the 1984 trawl survey indicate that none of the eight species were present in significant numbers. The average 1982-1984 harvest in the joint venture and foreign fisheries is about 1,500 mt with a 1984 harvest of only 700 mt. The EY for this group needs to be reevaluated. The Council considered the limiting effect that an optimum yield equal to the bycatch would have on the developing domestic fisheries, and established the optimum yield at 5000 mt which is substantially higher than the bycatch level so as not to limit that growth.

Atka mackerel - The 1984 survey indicates that the total biomass for Atka mackerel is 39,000 mt with 38,000 mt being available in the Western Area and 1,000 mt in the Central Area. Length frequency information suggest that the population consists mostly of large fish. Recruitment in the Central Area appears nonexistent. The absence of catches in the Eastern Area indicates stocks are not sufficiently abundant to support a commercial fishery. The low abundance of Atka mackerel may be due to westward shift in the distribution of stocks or to excessive fishing mortality. The Council reviewed the SSC recommendation for the the Western Area to set the exploitation rate between 10% and 15% of 38,000 mt, which would provide an OY between 3,800 mt and 5,700 mt. Since the current OY for the Western Area of 4,678 mt falls within this range, the Council opted not to change the OY. The Council also reviewed the SSC recommendation to set the OYs in the Central and Eastern Areas at bycatch levels only and recommended thus to the Secretary of Commerce. After reviewing the recent catch data, OYs were set at 500 mt and 100 mt in the Central and Eastern Areas, respectively.

Other Species - The "other species" category includes those groundfish species not individually addressed in the FMP. The FMP specifies the OY for those species to be equal to 5% of the total OY for all of the target groundfish species combined. Consequently, if the recommended OY changes are adopted the OY would be reduced to 22,435 mt.

4. Establish a Reporting System for Catcher/Processors

The objective of this proposal is to ensure that fishery managers receive timely estimates of catch by all domestic vessels so that fishery closure notices can be promptly issued when OYs are achieved. With the rapid recent growth of the domestic fishing fleet, increasing importance is being placed on timely reporting of domestic harvests in order to ensure that OYs are not exceeded. Vessels which deliver their catch to shore-based processors land their catch frequently enough to allow timely estimation of total catch under existing regulations. However, vessels which process their catch at sea can remain on the fishing grounds for extended periods of time. Catch reports submitted by these vessels at the time of landing as required under existing regulations are not timely enough to prevent OYs from being grossly exceeded. The resulting overharvests could seriously damage future production from groundfish stocks.

Current fishing regulations implementing the Gulf of Alaska and Bering Sea Fishery Management Plans require fishing vessels to submit a State of Alaska fish ticket or equivalent document to the Alaska Department of Fish and Game for any commercial groundfish harvest in the Gulf of Alaska or Bering Sea

within 7 days of the date of landing the catch. Vessels which preserve their catch by non-freezing refrigeration or icing methods must land their catch within a maximum of 10-12 days from the time of harvest in order to ensure product quality. The catch from these vessels, when delivered to shore-based processors, can be reported on a timely basis under existing regulations. If existing regulations are properly enforced, fishery managers can estimate harvests by these vessels with sufficient precision to ensure that OYs are not exceeded.

However, vessels which freeze or salt their catch aboard frequently remain at sea for trips of up to several months duration and are not currently required to report their catch until the time of landing and offloading. For the purposes of this amendment, a catcher/processor vessel is any vessel which holds its catch or any portion thereof for more than 14 days. At least twenty two catcher/processor vessels will be operating in the Gulf of Alaska and Bering Sea areas in 1985. Based on past catcher/processor landing records the combined hold capacity of these vessels will be approximately 13,000 mt. Therefore these vessels are capable of harvesting significant portions or even entire OYs in a single trip. Under existing fishing regulations, fishery managers have no knowledge of the catch aboard these vessels until the time of landing. In addition, vessels are not required to notify fishery managers when beginning fishing operations. Since domestic groundfish fishing vessels are also not marked for identification by enforcement overflights, the number of catcher/processor vessels actually fishing in a given management area is not known until the time of landing. Without knowledge of effort levels, fishery managers are not able to make projections of catch aboard based on past performance.

Delayed catch reporting is also a problem for fully domestic mothership operations. In these operations small catcher vessels without processing capability deliver their catch, usually by cod-end transfers, to a mothership/processor vessel. Current regulations require that an ADF&G fish ticket be filled out each time a catcher vessel delivers to the mothership/processor and that these fish tickets be forwarded to ADF&G within 7 days of the date that fish were delivered. Domestic mothership and floating processor operations thus far have all occurred in sheltered waters with at least periodic access to U.S. mail service so that regulations requiring filing of fish tickets with ADF&G within 7 days could have been enforced. However, there is a potential for these mothership operations to occur at sea, with no method of filing the fish tickets with ADF&G within the 7 day period required by law.

With such large processing capacities and increasing numbers of catcher/processor and mothership/processor vessels the risks of overharvesting groundfish resources under the current system are high. Because of the time delays involved in catch reporting under current regulations, groundfish resources could be drastically overharvested before fishery managers had even discovered that OYs had been exceeded. Since many of the groundfish species concerned are slow growing and long-lived, overharvesting can have considerable impacts on future production.

5. Establish Measures to Control the Pacific Halibut Bycatch

The halibut that is taken as bycatch in trawl fisheries results in fishing mortality even though the FMP requires that halibut bycatch be discarded because the survival rate of discarded halibut is typically less than 100% and

may approach zero in some fisheries. Therefore, the FMP contains restrictions on both foreign and domestic groundfish fishermen in the Western and Central Areas that were designed to control the bycatch of halibut, an important species in a separate and fully utilized domestic target fishery. Foreign trawl fishermen are not permitted to use on-bottom gear in the Central and Western Areas (i.e., between 147°W. and 170°W. longitude) from December 1 through May 31. Domestic fishermen are permitted to use on-bottom gear during this period until the total trawl take by domestic fishermen reaches the prohibited species catch (PSC) limit of 29 mt in the Western Area or 52 mt in the Central Area. Once the PSC limit is reached in an area, all further domestic trawling is prohibited in that area until June 1. The FMP does not restrict the use of on-bottom trawls by domestic or foreign fishermen during the rest of the year in these two areas.

The rapid development of the domestic groundfish trawl fleets, including both wholly domestic and joint venture operations, and the dramatic changes in fishing strategies that have occurred since the FMP was developed, approved, and implemented in the late 1970s have resulted in five specific problems that prevent the objectives of the FMP from being met without amending the FMP. The five problems are as follows:

- (1) The Shelikof Strait joint venture pollock is jeopardized by the 52 mt PSC in the Central Area even though the halibut bycatch is very low in this highly productive fishery.
- (2) The PSC limits for the Western and Central Areas jeopardize the maintenance and further development of domestic trawler fisheries for cod, flounders, and other groundfish species that are targeted on with on-bottom gear.
- (3) The bycatch of halibut by domestic trawlers during the six months for which there are no restrictions on the use of on-bottom gear has increased significantly.
- (4) Although the PSC limits are for all domestic trawlers, that is, those in both wholly domestic and joint venture operations, only the bycatch of the joint ventures is monitored because bycatch cannot be effectively monitored without extensive onboard observer coverage and such coverage exists for joint venture but not wholly domestic operations.
- (5) With respect to regulating the bycatch of halibut in groundfish trawl fisheries, the FMP has not been flexible enough to remain effective as conditions in the fisheries change.

A more detailed discussion of each of these problems and the temporary solutions that have been implemented through emergency rules is presented below.

Problem 1. The Shelikof Strait joint venture pollock fishery in the Central Area has grown from a relatively small fishery in the early 1980s into a very important fishery which in 1985 will take more than 221,000 mt of groundfish including over 218,00 mt of pollock and will have an estimated exvessel value of \$21 million. The halibut bycatch in this fishery has been very low because

off-bottom trawl gear is used. Based on reported bycatch through April 20, 1985, it is estimated that the halibut bycatch will not exceed 0.5 mt in 1985. This is a significant decrease from the low levels of bycatch of 4 mt and 14 mt that were taken in 1983 and 1984, respectively. Emergency rules were implemented for the 1984 fishery and again for the 1985 fishery to prevent the attainment of the PSC limit in the Central Area from jeopardizing this extremely important fishery which takes only very small quantities of halibut. Specifically, the emergency rules permitted off-bottom trawling to continue regardless of the level of halibut bycatch by domestic trawlers.

Problem 2. The domestic PSC limits of 29 mt and 52 mt, respectively, for the Western and Central Areas were implemented in 1978. At that time these limits were equal to approximately one percent of the amount of Pacific cod expected to be taken by domestic trawlers in 1979 or soon thereafter. Domestic on-bottom trawl groundfish catches have increased dramatically since then. By 1984 the joint-venture catches of Pacific cod, flounder, rockfish, and Atka mackerel, target species that are typically taken with bottom trawls, were 3,108 mt and 7,612 mt in the Western and Central Areas, respectively. The 1984 catches of these same species in wholly domestic fisheries were 221 mt and 2,883 mt, respectively, in the Western and Central Areas. Emergency rules were implemented for the 1984 fishery and again for the 1985 fishery to prevent the PSC limits implemented in 1978 from excessively restricting the catch of domestic on-bottom trawlers. Specifically, the limits were temporarily increased from 29 mt to 270 mt in the Western Area and from 52 mt to 768 mt in the Central Area. If the emergency rules had not been in effect and if bycatch had occurred at the rate it did in 1984, domestic on-bottom (Table 2) trawling would have been prohibited from the last weeks of December 1983 until June 1, 1984 in the Central Area and during the last part of May in the Western Area (see Table 2). The joint venture groundfish catches with on-bottom trawls were less than 800 mt in the Western Area and less than 2,000 mt in the Central Area during the periods in which domestic trawling would have been prohibited had the emergency rules not increased the PSC limits. During these periods, the groundfish catches in wholly domestic operations were approximately 1 mt and 2,800 mt in the Western and Central Area, respectively. It should be noted that since much of the on-bottom trawl catch by domestic vessels occurs after May 31, it is possible that the main effect of the increased PSC limits was a change in the timing of the catch and not in the quantity of the 1984 on-bottom trawl catch (see Tables 3 and 4).

Problem 3. The FMP prohibited foreign on-bottom trawling and limited the halibut bycatch of all domestic trawlers from December 1 through May 31 because juvenile halibut are at shallow depths and more vulnerable to capture in trawls during this period. In recent years, it has become apparent that large numbers of halibut are vulnerable in the rest of the year to foreign, joint venture, and presumably wholly domestic on-bottom trawl operations. Estimates of the monthly joint venture halibut bycatches for 1983 and 1984 are presented in Table 5 for the Western Area and in Table 6 for the Central Area. In each area and year, the bycatch during the unregulated period approaches or exceeds that of the regulated period. It should also be noted that beginning in 1985, the regulated period for foreign trawlers will be 12 months. That is, beginning in 1985 foreign on-bottom will be prohibited at any time. The emergency rules that were implemented for the 1984 fishery and again for the 1985 fishery did not extend the regulated period for domestic trawlers.

Table 2 -- Cumulative monthly joint-venture halibut bycatch beginning December (metric tons).

Month	C. Gulf	W. Gulf
12/83	84	0
01/84	124	1
02/84	135	1
03/84	138	1
04/84	141	16
05/84	166	62
06/84	196	84
07/84	220	87
08/84	268	92
09/84	352	97
10/84	420	141
11/84	500	141
12/84	13	0
01/85	13	0
02/85	13	0
03/85	13	0
04/85	13	4

E 3. -- WESTERN AREA JOINT VENTURE AND DOMESTIC GROUNDFISH CATCH BY MONTH, 1983-1985

NPFMC JOINT-VENTURE PERIOD REPORT: MONTHLY COMMERCIAL GROUNDFISH LANDED CATCH (METRIC TONS) FOR 1983 FOR WESTERN AREA													
IES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
LLL FLATFISH	-	-	-	6	7	17	69	35	15	21	-	-	171
LLL ROCKFISH	-	-	-	58	550	365	309	310	393	231	-	-	2216
MACKEREL	-	-	-	1	191	58	53	41	292	152	-	-	789
FIC COD	-	-	-	2	72	37	45	86	187	40	-	-	469
EFISH	-	-	-	3	2	4	70	7	32	16	-	-	134
EYE POLLOCK	-	-	-	4	1	4	189	111	54	135	-	-	497
LLL ROUNDFISH	-	-	-	9	266	103	358	245	566	342	-	-	1889
ISC, GROUNDFISH	-	-	-	1	5	8	5	8	11	6	-	-	45
GROUNDFISH	-	-	-	75	829	493	741	598	986	601	-	-	4322

NPFMC JOINT-VENTURE PERIOD REPORT: MONTHLY COMMERCIAL GROUNDFISH LANDED CATCH (METRIC TONS) FOR 1984 FOR WESTERN AREA													
IES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
LLL FLATFISH	1	-	-	20	63	19	8	28	53	362	2	TR	556
LLL ROCKFISH	-	-	-	311	492	359	118	177	57	141	1	TR	1656
MACKEREL	-	-	-	77	207	44	29	5	TR	216	-	-	577
FIC COD	2	-	-	17	48	26	8	43	48	104	2	TR	298
EFISH	-	-	-	10	49	32	13	17	49	104	1	TR	275
EYE POLLOCK	6	-	-	10	21	7	45	137	1202	6458	112	8	8006
LLL ROUNDFISH	8	-	-	114	326	108	95	201	1300	6882	114	8	9156
ISC, GROUNDFISH	1	-	-	3	10	8	2	5	8	23	TR	TR	61
GROUNDFISH	11	-	-	448	890	495	223	412	1417	7408	117	8	11429

NPFMC JOINT-VENTURE PERIOD REPORT: MONTHLY COMMERCIAL GROUNDFISH LANDED CATCH (METRIC TONS) FOR 1985 FOR WESTERN AREA												
IES	JAN	FEB	MAR	APR	MAY	TOTAL						
LLL FLATFISH	-	-	-	2	TR	2						
LLL ROCKFISH	-	-	-	1	TR	1						
MACKEREL	-	-	-	TR	TR	TR						
FIC COD	-	-	-	6	7	7						
EYE POLLOCK	-	-	-	864	136	1000						
LLL ROUNDFISH	-	-	-	869	137	1006						
ISC, GROUNDFISH	-	-	-	1	TR	1						
GROUNDFISH	-	-	-	873	138	1011						

TABLE 3. -- CONTINUED

NPFMC DOMESTIC PERIOD REPORT: MONTHLY COMMERCIAL GROUND FISH LANDED CATCH (METRIC TONS) FOR 1983 FOR WESTERN AREA													
PECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
ACIFIC OCEAN PERCH	-	-	-	-	-	-	-	-	-	-	-	7	7
POP GROUP	-	-	-	-	-	-	-	-	-	-	-	7	7
NSP. ROCKFISH	-	-	-	-	-	4	-	-	-	-	-	-	4
ALL ROCKFISH	-	-	-	-	-	4	-	-	-	-	-	7	11
ACIFIC COD	-	-	-	-	51	-	-	-	1	-	7	16	74
ABLEFISH	-	-	-	-	-	-	-	-	-	-	-	2	2
ALLEVE POLLOCK	-	-	-	-	-	-	-	-	T	-	-	-	1
ALL ROUND FISH	-	-	-	-	5T	-	-	-	2	-	7	17	77
LL GROUND FISH	-	-	-	-	51	4	-	-	3	-	7	24	88

NPFMC DOMESTIC PERIOD REPORT: MONTHLY COMMERCIAL GROUND FISH LANDED CATCH (METRIC TONS) FOR 1984 FOR WESTERN AREA													
PECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
ALL FLATFISH	-	-	-	-	-	-	-	-	-	5	-	1	5
ELLOWEYE ROCKFISH	-	-	-	-	-	-	-	-	-	T	1	-	1
NSP. POP GROUP	-	-	-	-	-	-	26	49	1T	T	30	-	116
POP GROUP	-	-	-	-	-	-	26	49	11	1	30	-	116
HORNHEADS	-	-	-	-	-	-	-	4	2	-	4	-	9
ALL ROCKFISH	-	-	-	-	-	-	26	52	12	T	35	-	126
TKA MACKEREL	-	-	-	-	-	-	-	-	-	31	TR	-	31
ACIFIC COD	12	-	-	3	T	-	4	T	7	24	6	-	58
ABLEFISH	-	-	-	-	TR	-	15	6	41	147	111	24	345
ALL ROUND FISH	12	-	-	3	1	-	19	7	48	202	117	24	435
LL GROUND FISH	12	-	-	3	1	-	45	60	61	208	152	25	566

NPFMC DOMESTIC PERIOD REPORT: MONTHLY COMMERCIAL GROUND FISH LANDED CATCH (METRIC TONS) FOR 1985 FOR WESTERN AREA												
PECIES	JAN	FEB	MAR	APR	TOTAL							
ALL FLATFISH	-	1	8	-	9							
ACIFIC COD	603	1617	1336	737	4294							
ABLEFISH	40	24	44	71	179							
ALLEVE POLLOCK	37	18	14	68	68							
ALL ROUND FISH	680	1658	1395	808	4541							
LL GROUND FISH	680	1659	1403	808	4550							

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THIS REPORT INCLUDES ONLY DATA FOR NORTH PACIFIC COUNCIL INPFC AREAS

TR =# LANDED CATCH LESS THAN 0.5 METRIC TONS, OR METRIC TONS PER DELIVERY LESS THAN 0.005

TABLE 4. -- CENTRAL AREA JOINT VENTURE AND DOMESTIC GROUND FISH CATCH BY MONTH, 1983-1985

NPFMC JOINT-VENTURE PERIOD REPORT: MONTHLY COMMERCIAL GROUND FISH LANDED CATCH (METRIC TONS) FOR 1983 FOR CENTRAL AREA													
PECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
ALL ROCKFISH	TR	1	1	TR	2	-	2	5	1	5	22	20	60
TKA MACKEREL								TR			1	TR	1
PACIFIC COD	23	110	175	15	2	-	175	337	125	54	238	691	1957
ABLEFISH	TR	1	3	TR	4	-	26	10	1	8	46	42	141
ALLEYE POLLOCK	5856	43444	77241	4848	TR	-	117	166	55	105	257	1544	133634
ALL ROUND FISH	5880	43555	77422	4864	6	-	323	513	185	167	541	2277	135733
MISC. GROUND FISH	30	49	80	5	TR	-	6	25	17	24	66	48	349
ALL GROUND FISH	5912	43609	77513	4869	12	-	430	938	608	442	1085	3244	138662
NPFMC JOINT-VENTURE PERIOD REPORT: MONTHLY COMMERCIAL GROUND FISH LANDED CATCH (METRIC TONS) FOR 1984 FOR CENTRAL AREA													
PECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
ALL FLATFISH	318	95	33	25	136	240	421	303	261	441	323	99	2696
ALL ROCKFISH	19	31	6	1	4	101	10	151	29	11	9	3	376
TKA MACKEREL	1	TR	TR	2	TR	TR	1	3	TR	TR	TR	TR	7
PACIFIC COD	438	441	330	71	345	452	443	380	605	346	228	46	4125
ABLEFISH	46	8	1	TR	3	8	26	38	19	34	25	8	216
ALLEYE POLLOCK	8720	70459	97768	1013	195	230	595	278	4738	7206	5196	2615	199014
ALL ROUND FISH	9204	70908	98099	1086	543	691	1065	699	5363	7586	5449	2669	203362
MISC. GROUND FISH	223	796	71	4	12	18	13	11	12	12	9	20	1201
ALL GROUND FISH	9765	71829	98209	1117	695	1050	1509	1165	5664	8050	5791	2791	207635
NPFMC JOINT-VENTURE PERIOD REPORT: MONTHLY COMMERCIAL GROUND FISH LANDED CATCH (METRIC TONS) FOR 1985 FOR CENTRAL AREA													
PECIES	JAN	FEB	MAR	APR	MAY	TOTAL							
ALL FLATFISH	2	44	23	2	-	71							
POP GROUP	TR	10	TR	2	-	12							
ALL ROCKFISH	1	10	TR	2	-	14							
TKA MACKEREL	TR	TR				TR							
PACIFIC COD	23	514	384	13	-	934							
ABLEFISH	TR	1	2	TR	-	3							
ALLEYE POLLOCK	3355	84101	119021	11983	-	218460							
ALL ROUND FISH	3378	84615	119407	11996	-	219397							
MISC. GROUND FISH	54	1536	235	83	-	1908							
ALL GROUND FISH	3435	86206	119664	12083	-	221389							

TABLE 4 -- CONTINUED

NPFMC DOMESTIC PERIOD REPORT: MONTHLY COMMERCIAL GROUND FISH LANDED CATCH (METRIC TONS) FOR 1983 FOR CENTRAL AREA													
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
ALL FLATFISH	20	10	9	10	13	1	TR	-	1	7	15	1	88
ALL ROCKFISH	-	-	-	8	3	4	2	1	4	4	1	TR	26
ACIFIC COD	72	372	338	618	1018	558	TR	1	8	25	632	463	4106
ABLEFISH	3	10	15	15	65	41	43	107	14	5	TR	5	307
ALLEYE POLLOCK	65	18	27	633	1083	600	TR	107	2	1	632	6	118
ALL ROUND FISH	140	390	375	633	1083	600	43	107	25	30	632	474	4533
MISC. GROUND FISH	4	12	5	-	TR	7	1	-	24	1	4	1	60
LL GROUND FISH	164	412	389	650	1099	612	48	108	54	42	652	477	4706

NPFMC DOMESTIC PERIOD REPORT: MONTHLY COMMERCIAL GROUND FISH LANDED CATCH (METRIC TONS) FOR 1984 FOR CENTRAL AREA													
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
ALL FLATFISH	69	74	85	9	4	-	-	-	-	-	-	-	240
ALL ROCKFISH	3	TR	TR	6	7	5	6	6	2	2	18	2	58
ACIFIC COD	276	554	860	145	174	35	5	TR	6	46	279	250	2585
ABLEFISH	4	13	85	17	85	491	635	789	672	46	2	-	2838
ALLEYE POLLOCK	93	75	157	1	3	3	641	790	678	46	283	250	329
ALL ROUND FISH	373	642	1101	163	263	526	641	790	678	46	283	250	5755
NSP. GROUND FISH	TR	-	-	-	-	-	-	-	TR	-	-	-	TR
MISC. GROUND FISH	TR	-	-	-	-	-	-	-	TR	-	-	-	TR
LL GROUND FISH	445	716	1186	178	273	531	647	796	681	48	301	252	6053

NPFMC DOMESTIC PERIOD REPORT: MONTHLY COMMERCIAL GROUND FISH LANDED CATCH (METRIC TONS) FOR 1985 FOR CENTRAL AREA											
SPECIES	JAN	FEB	MAR	APR	TOTAL						
ALL FLATFISH	-	TR	2	-	2						
ALL ROCKFISH	TR	-	TR	4	4						
ACIFIC COD	207	204	161	75	647						
ABLEFISH	43	52	225	395	716						
ALLEYE POLLOCK	179	762	542	470	1483						
ALL ROUND FISH	430	1018	928	470	2846						
MISC. GROUND FISH	2	-	-	-	2						
LL GROUND FISH	432	1019	930	474	2854						

ACFIN 13MAY85 13:21 REPORT
 THIS REPORT INCLUDES ONLY DATA FOR NORTH PACIFIC COUNCIL INPFC AREAS
 TR = L ANDED CATCH LESS THAN 0.5 METRIC TONS, OR METRIC TONS PER DELIVERY LESS THAN 0.005

Table 5. -- Western Gulf joint-venture catch and bycatch in metric tons, 1983-1985

NATION	VESSEL	YR	MO	AREA	POLLOK	ATKAMK	PACCOD	FLOUND	THY	RF	RKFISH	SQUID	OTHER	POPC	BLKCOD	SALMON	HALBUT	K	CRAB	T	CRAB	T
US	J V	83	1	W GULF	0	0.0	0	0	0	0	0.0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	83	2	W GULF	0	0.0	0	0	0	0	0.0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	83	3	W GULF	0	0.0	0	0	0	0	0.0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	83	4	W GULF	4	0.7	2	6	6	4	6.1	0	1	48.4	2.9	0	2	0	0	0	0	0
US	J V	83	5	W GULF	1	191.1	72	7	2	83.7	0	5	464.9	2.5	0	16	0	0	0	0	0	0
US	J V	83	6	W GULF	4	61.9	37	17	1	117.4	0	8	258.8	4.3	0	19	0	0	0	0	0	0
US	J V	83	7	W GULF	189	43.4	44	68	3	22.5	0	5	266.5	69.9	0	8	0	0	0	0	0	0
US	J V	83	8	W GULF	111	47.0	87	36	0	8.7	0	8	305.9	6.6	0	7	0	0	0	0	0	0
US	J V	83	9	W GULF	54	297.4	190	15	1	23.2	0	11	375.4	32.2	0	11	0	0	0	0	0	0
US	J V	83	10	W GULF	135	147.0	37	21	1	9.6	0	6	213.7	15.7	0	14	0	0	0	0	0	0
US	J V	83	11	W GULF	0	0.0	0	0	0	0.0	0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	83	12	W GULF	0	0.0	0	0	0	0.0	0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	83		W GULF	497	788.6	469	171	12	271.2	1	44	1933.7	134.2	0	76	0	0	0	0	0	0
NATION	VESSEL	YR	MO	AREA	POLLOK	ATKAMK	PACCOD	FLOUND	THY	RF	RKFISH	SQUID	OTHER	POPC	BLKCOD	SALMON	HALBUT <td>K</td> <td>CRAB <td>T</td> <td>CRAB <td>T</td> </td></td>	K	CRAB <td>T</td> <td>CRAB <td>T</td> </td>	T	CRAB <td>T</td>	T
US	J V	84	1	W GULF	6	0.0	2	1	0	0	0.0	0	1	0.0	0.0	0	1	0	0	0	0	0
US	J V	84	2	W GULF	0	0.0	0	0	0	0	0.0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	84	3	W GULF	0	0.0	0	0	0	0	0.0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	84	4	W GULF	9	39.8	13	19	1	2.8	0	3	290.2	9.5	0	15	0	0	0	0	0	0
US	J V	84	5	W GULF	22	286.9	62	68	1	112.2	0	11	445.2	51.6	0	46	0	0	0	0	0	0
US	J V	84	6	W GULF	6	0.1	16	15	4	34.7	0	8	271.4	30.5	0	22	0	0	0	0	0	0
US	J V	84	7	W GULF	29	29.5	7	7	0	18.7	0	1	78.9	11.5	0	3	0	0	0	0	0	0
US	J V	84	8	W GULF	153	4.8	44	29	2	19.0	0	6	176.7	18.0	0	5	0	0	0	0	0	0
US	J V	84	9	W GULF	1000	0.1	47	50	1	4.2	0	7	42.9	47.8	0	5	0	0	0	0	0	0
US	J V	84	10	W GULF	6705	216.8	114	376	8	8.2	0	23	135.2	114.3	1	44	0	0	0	0	0	0
US	J V	84	11	W GULF	86	0.0	0	1	0	0.0	0	0	0	0.6	0.0	0	0	0	0	0	0	0
US	J V	84	12	W GULF	0	0.0	0	0	0	0.0	0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	84		W GULF	8018	578.0	305	566	18	199.8	1	60	1441.1	283.4	1	141	0	0	0	0	0	0
NATION	VESSEL	YR	MO	AREA	POLLOK	ATKAMK	PACCOD	FLOUND	THY	RF	RKFISH	SQUID	OTHER	POPC	BLKCOD	SALMON	HALBUT <td>K</td> <td>CRAB <td>T</td> <td>CRAB <td>T</td> </td></td>	K	CRAB <td>T</td> <td>CRAB <td>T</td> </td>	T	CRAB <td>T</td>	T
US	J V	85	1	W GULF	0	0.0	0	0	0	0	0.0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	85	2	W GULF	0	0.0	0	0	0	0	0.0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	85	3	W GULF	0	0.0	0	0	0	0	0.0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	85	4	W GULF	762	0.0	5	1	0	0.0	0	1	0.8	0.0	0.0	0	4	0	0	0	0	0
US	J V	85	5	W GULF	238	0.0	2	1	0	0.0	0	0	0	0.0	0.0	0	1	0	0	0	0	0

Table 6. -- Central Gulf joint-venture catch and bycatch in metric tons, 1983-1985

NATION	VESSEL	YR	MO	AREA	POLLOK	ATKAMK	PACCOD	FLOUND	THY	RF	RKFISH	SQUID	OTHER	POPC	BLKCOD	SALMON	HALBUT	K	CRAB	T	CRAB	T
US	J V	83	1	C GULF	3614	0.0	15	1	0	0.0	0.0	0	23	0.4	0.1	1	0	0	0	0	0	0
US	J V	83	2	C GULF	41292	0.0	109	4	0	0.0	0.0	1	41	0.4	0.5	1	0	0	0	0	0	0
US	J V	83	3	C GULF	84092	0.0	194	11	0	0.1	0.1	1	91	1.7	2.9	1	1	0	0	0	0	0
US	J V	83	4	C GULF	2392	0.0	10	0	0	0.0	0.0	0	4	0.1	0.0	0	0	0	0	0	0	0
US	J V	83	5	C GULF	0	0.0	2	3	0	0.1	0.1	0	0	2.3	4.4	0	1	0	0	0	0	0
US	J V	83	6	C GULF	0	0.0	0	0	0	0.0	0.0	0	0	0.0	0.0	0	0	0	0	0	0	0
US	J V	83	7	C GULF	109	0.0	161	88	0	0.7	0.7	0	5	0.8	25.9	1	9	0	0	0	0	0
US	J V	83	8	C GULF	175	0.0	388	460	0	2.2	2.2	0	31	2.6	10.1	1	59	3	19	3	19	19
US	J V	83	9	C GULF	56	0.0	100	361	0	0.6	0.6	0	12	0.4	0.6	0	34	4	14	4	14	14
US	J V	83	10	C GULF	102	0.0	31	183	0	0.8	0.8	0	20	3.7	8.2	0	21	0	2	2	0	0
US	J V	83	11	C GULF	351	0.6	288	562	1	4.7	4.7	0	77	17.2	50.5	2	72	6	6	6	6	6
US	J V	83	12	C GULF	1451	0.3	659	847	0	8.7	8.7	0	41	11.5	37.6	4	84	2	2	2	2	2
US	J V	83		C GULF	133634	1.0	1957	2521	1	17.9	17.9	3	346	41.1	140.9	11	280	15	15	15	15	15
US	J V	84	1	C GULF	5003	0.6	394	300	0	1.2	1.2	0	80	13.6	45.6	2	40	1	4	1	4	1
US	J V	84	2	C GULF	82794	0.1	513	115	0	1.2	1.2	3	947	33.9	8.6	14	11	0	0	0	0	0
US	J V	84	3	C GULF	89151	0.1	301	32	0	1.8	1.8	1	59	3.5	0.9	5	3	0	0	0	0	0
US	J V	84	4	C GULF	999	2.2	36	17	0	0.9	0.9	0	4	0.3	0.0	0	3	0	0	0	0	0
US	J V	84	5	C GULF	224	0.3	388	159	0	1.8	1.8	0	13	2.6	2.9	0	25	0	0	0	0	0
US	J V	84	6	C GULF	216	0.0	445	224	0	30.0	30.0	0	18	70.5	7.8	0	30	0	0	0	0	0
US	J V	84	7	C GULF	510	1.1	382	367	0	6.8	6.8	0	12	2.0	21.2	3	24	5	5	5	5	5
US	J V	84	8	C GULF	377	2.6	500	435	0	23.5	23.5	0	16	142.4	55.1	0	48	4	4	4	4	4
US	J V	84	9	C GULF	4633	0.0	721	335	1	9.0	9.0	0	18	7.4	29.2	4	84	4	4	4	4	4
US	J V	84	10	C GULF	8015	0.1	376	482	0	5.7	5.7	0	14	6.2	42.4	47	68	4	4	4	4	4
US	J V	84	11	C GULF	4710	0.0	254	329	0	1.4	1.4	0	9	7.7	23.6	51	80	1	1	1	1	1
US	J V	84	12	C GULF	2456	0.0	35	85	0	0.7	0.7	0	20	2.5	7.6	29	13	0	0	0	0	0
US	J V	84		C GULF	199086	7.1	4344	2882	1	84.1	84.1	4	1209	292.6	244.9	156	431	18	18	18	18	18
US	J V	85	1	C GULF	4594	0.2	32	3	0	1.0	1.0	0	74	0.7	0.1	0	0	0	0	0	0	0
US	J V	85	2	C GULF	92520	0.0	549	44	0	0.1	0.1	5	1595	10.2	0.7	0	0	0	0	0	0	0
US	J V	85	3	C GULF	108311	0.0	339	22	0	0.0	0.0	1	146	0.0	1.9	0	0	0	0	0	0	0
US	J V	85	4	C GULF	13036	0.0	14	3	0	0.1	0.1	0	87	1.6	0.0	0	0	0	0	0	0	0

Problem 4. The fourth problem addressed by the proposed changes to the halibut PSC regulations is that although the PSC limits are for all domestic trawlers, only the bycatch of the joint venture trawlers is monitored because bycatch cannot be effectively monitored without extensive onboard observer coverage and such coverage exists for joint venture but not wholly domestic operations. Therefore, if the PSC limits are set on the basis of acceptable bycatch levels for all domestic trawlers as they appear to have been set in the initial FMP and subsequent emergency rules, and if only joint venture bycatch is monitored, the prohibition on domestic trawling will not be imposed until the joint ventures take the PSC limits and by that time the total bycatch of all domestic trawlers will have exceeded the acceptable level by the unknown amount taken in wholly domestic operations. This problem was not addressed by the emergency rules implemented for the 1984 and 1985 fisheries.

Problem 5. The development of the first four problems since the FMP was implemented and the need to change the bycatch regulation by emergency rules and the lengthy amendment process demonstrate that the FMP is not sufficiently flexible with respect to bycatch regulations to remain effective as conditions change. The need for flexibility is particularly important for rapidly growing and changing fisheries such as the wholly domestic and joint venture fisheries.

6. Implement the NMFS Habitat Policy

The proposed action amends the FMP by modifying and adding certain sections specifically to address the habitat requirements of individual species in the Gulf of Alaska groundfish fishery. The amendment describes the diverse habitat types within the Gulf of Alaska, delineates the life stages of the species, identifies potential sources of habitat degradation and the potential risk to the fishery, and describes existing programs, applicable to the area, that are designed to protect, maintain, or restore the habitat of living marine resources. The amendment responds to the Habitat Conservation Policy of the National Marine Fisheries Service, which advocates emphatic consideration of habitat concerns in the development or amendment of FMPs, and the strengthening of NMFS' partnerships with states and the councils on habitat issues.

7. Sablefish Fishing Seasons

Current federal regulations open all groundfish fisheries including sablefish on January 1 and close the season on December 31. The objective of this proposal is to delay the sablefish season opening date in one or more areas. There are several reasons which have been presented in support of a later season. They are: (1) resource allocation; (2) fishermen safety; and (3) fish quality.

The delay of the sablefish fishing season is considered a viable management tool for resource allocation purposes. Due to poor weather conditions in the Gulf of Alaska, vessel size plays an important role in a fisherman's ability to fish. During times when fishing effort for this species was low, fishermen would wait for favorable weather before fishing. This factor was extremely important given that most of the vessels used in this fishery are small, longline-type vessels. In the last few years, as fishing effort grew there has been more pressure on fishermen to harvest "their share of the resource."

Large vessels fishing both hook and longline and pots have also entered the fishery. These vessels are more capable of fishing in poor weather than the more common small boats and put pressure on fishermen to fish in poor conditions. Fishing by any vessel in poor weather increases the risks to fishermen's safety. By delaying the sablefish opening date until better weather all segments of the fleet have equal chances in harvesting the OY. Weather impacts on vessel safety are also minimized.

Fish quality problems associated with spawning sablefish has been presented in support of a later fishing season. Product quality is lower during periods of spawning or immediately following reproduction. Since sablefish is a low-OY species, and there exists a fishing fleet capable of taking the OY at any time of the year, it may be desirable to schedule the fishing season to produce the highest quality product and obtain the greatest value possible.

It should be noted that prior to the enactment of the Groundfish FMP sablefish fishing was closed by regulation during the winter and spring months. This regulation was first enacted by the federal government in 1945 to halt the observed decline in sablefish CPUE, to protect the sablefish stocks during the spawning period and to minimize the incidental catch of halibut which tend to overlap sablefish in depth range during the winter months. Inferior quality of flesh and viscera during and after spawning was also cited as a reason for the winter closure. During 1945 and 1946 the closure was in effect from December 1 through March 15. In 1947 the closure was extended to April 30 since the shorter closure failed to halt the observed decline in sablefish CPUE. Because the same vessels fished both sablefish and halibut, the closure actually extended until after the end of the IPHC Area 2 halibut season, usually in mid- to late-August. For that reason the sablefish fishery evolved into a fall fishery as reflected in the timing of the current northern inside area season in state waters.

The winter closure regulation was adopted by the state at statehood and remained in effect until 1977. It was rescinded then only to allow the U.S. vessels to compete effectively with the foreign fleet that was operating off the coast of Southeastern Alaska at that time. Because the season was closed during the winter and spring for over a thirty-year period, there is no time series of information available concerning the effects of a winter closure on quality or CPUE. Management memorandums and letters written during the mid-1940s indicate that a substantial decline in incidental halibut catch would be directed attributed to the winter closure.

III. ALTERNATIVE MANAGEMENT MEASURES INCLUDING THOSE PROPOSED

Certain alternatives to each amendment proposal have been considered by the Council. A summary of each alternative, including those proposed, follows:

1. Establish a Gear and/or Area Restriction in the Sablefish Fishery

For purposes of this plan amendment, there are four alternatives which should be considered. These alternatives encompass a wide range of public proposals including a call for a hook and longline only fishery for sablefish for various areas of the Gulf. The Council's alternatives, in terms of gear and area restrictions, were narrowed to limiting areas eastward of a series of

longitudinal lines in the Gulf for hook and longline only, while leaving all other areas for multiple gear use; allocating portions of OY to specific gear types; placing a ceiling on the number of vessels using pot gear; and license limitation. The eligible gear types for multiple gear use are: hook and longline, pot, trawl and gillnet. The four alternatives are:

Alternative 1 - Maintain status quo.

Under this alternative, use of all eligible sablefish gear would be allowed throughout the Gulf of Alaska. This alternative would not address any of the problems identified in Section II.

Alternative 2 - Allocate the sablefish OY to specific gear types.

The Council has long been aware that many of the questions it faces involve the allocation of scarce fishery resources between competing groups of users. Any regulatory measure which affects the pattern of catch in the industry technically can be thought of as having allocational effects. Where a fishery is resource constrained, or fully harvested by all the gear groups, actions which increase the share of harvests to one group of fishermen will necessarily decrease the share to other groups.

The most common approaches to the regulation or management of fishing effort have involved the institution of time and area closures, restrictions on the amount of gear or on the types and size of vessels that can be used, or (as in the case of prohibited species) the amounts of incidental catch that may be taken by different groups of vessels. Only the latter can be considered a direct form of allocation, since it involves telling one group what the limit on the catch of a particular species may be. This is typically done for species taken incidentally to target operations for some other species and then as a further disincentive to capture, all of the species are prohibited; they must be returned to the sea.

The other types of regulation just mentioned have definite allocational effects, but they are indirect in the sense that the Council (or, for state-managed fisheries, the Board of Fisheries) does not tell members of each gear group how much of a species they can take. Rather, through the institution of various types of restrictions, the amounts which each group will ultimately take is affected. However, the managing body often has not established exactly what the allocational outcome might be, and is sometimes surprised by unexpected outcomes of some types of regulations. It is for this reason that the alternative of allocating specific amounts to different gear groups in the directed sablefish fishery is proposed. The Council may wish, after weighing all of the pertinent testimony and analysis, to make a decision regarding the amounts of the resource which each gear group can take, rather than selecting a strategy which will generally favor one group, but to an unknown extent.

Alternative 3 - Exclusive gear areas.

Hook and Longline-only areas:

- (a) Designate the area east of 147°W. longitude as a hook and longline-only area for directed sablefish fishing.

This area includes the existing Southeast Outside, East Yakutat, and West Yakutat Districts which together make the Eastern Regulatory Area (Figure 1). A large number of longline boats operate in this area and the Southeast Alaska fish processing industries have come to rely on this resource as a method of maintaining stability in their operations. Ground preemptions and gear conflicts between hook and longline fishermen and other gear would be eliminated if this alternative were approved. Apart from the crab fisheries, there are few fishermen who fish with gear other than hook and line in this area.

(b) Designate the area east of 159°W. longitude as a hook and longline-only area for directed sablefish fishing.

This alternative would encompass a much larger area than option (a), because it would include all of the Eastern and Central Regulatory Areas. If this alternative were approved, a multiple gear sablefish fishery would be limited to waters west of 159°W. longitude, or the Western Regulatory Area. Gear conflict between sablefish fishermen using multiple gear would be eliminated in the two areas. Conflicts between fishermen fishing on a variety of species can still occur, especially in the Central area where an established crab fishery utilizing pots and a developing groundfish trawl fishery is conducted.

(c) Designate the area east of 170°W. longitude as a hook and longline-only area for directed sablefish fishing.

This alternative would restrict the gear used to harvest sablefish to hook and longline only throughout the Gulf of Alaska. All three regulatory areas, the Eastern, Central and Western, would be included under this proposal. When reviewing the other alternatives, this option is the most extreme of the hook and longline-only alternatives. The alternative if approved, would shift the sablefish fishery from a multiple gear fishery to one of a single gear type. Gear conflicts and grounds preemption between longline fishermen and other gear targeting on sablefish would be eliminated. However, the potential gear conflict between longline sablefish fishermen and fishermen targeting on other groundfish species with a variety of gear will still exist.

Pot-only areas:

(d) Designate the area east of 147°W longitude as a pot-only area for directed sablefish fishing.

This area is identical as described above under option (a). In 1985, three large catcher/processor vessels harvested sablefish using pot gear, taking approximately 33% of the OY in this area. This pot harvest of sablefish represented a fifteen-fold increase from 1984. In 1983, there were no vessels fishing sablefish with pot gear. As with option (a), this alternative would eliminate the gear conflicts and grounds preemption problems between pot fishermen and other gear. However, it will likely displace 33 vessels who fished in this area in 1985 using hook and longline gear.

(e) Designate the area east of 159°W longitude as a pot-only area for directed sablefish fishing.

This area is identical as described above under option (b). If this alternative were approved, a multiple gear sablefish fishery would be limited to waters west of 159°W longitude, or the Western Regulatory Area. This alternative shares the same advantages and disadvantages as described under option (b).

(f) Designate the area east of 170°W longitude as a pot-only area for directed sablefish fishing.

This alternative would restrict the gear used to harvest sablefish to pots only throughout the Gulf of Alaska. All three regulatory areas, the Eastern, Central and Western, would be included under this proposal. This alternative, if approved, would have a large impact on the 200 plus hook and longline vessels used in this fishery. It is unlikely that many of these vessels will be capable of converting to pot gear to fish sablefish.

Alternative 4 - Place a ceiling on the number of vessels harvesting sablefish using pot gear.

The objective of this alternative is to place a ceiling on the number of vessels using pot gear to harvest sablefish. The ceiling would be based on current participants using pots to harvest sablefish prior to March 1, 1985. It would prevent expansion of this gear into the fishery. An increase in number of participants or vessels using hook and longline, trawl, or gillnet would be permitted under this alternative. As the proportion of these other gears increase within the fleet, the number of gear conflict or grounds preemption problems associated with pot gear would decline but would not be necessarily eliminated.

Alternative 5 - License Limitation or Comprehensive Effort Management.

The objective of this alternative is to institute a system in which effort would be controlled by general moratorium, followed by the institution of a privately-funded effort management program by gear type. This alternative may encompass OY allocation, gear and/or area restriction or other alternatives to address the gear conflict and grounds preemption problem. Alternative 5 will then possess the advantages of several of the previously described alternatives. However, developing a long-term limitation program that addresses both the fishing effort and gear conflict problem is beyond the scope of Amendment 14. It is presented here for discussion purposes only and may be reconsidered at a future date.

Alternative 6 - Establish a hook and longline-only area east of 147°W longitude with 5% of OY reserved for trawl bycatch; area by area distribution of the OY in the Central (147°W - 159°W) and Western (159°W - 170°W) Gulf of Alaska by the following percentages: 55% to hook and longline fleet, 25% to pot fleet, and 20% to trawl fleet. In addition, a one-year phase-out of pot gear will occur in the Central area of the Gulf, and a three-year phase-out will occur in the Western Gulf, after which the pot portion of the OY will be allocated to the hook and longline fleet.

This alternative combines Alternatives 2 and 3 by allocating OY to specific gear types with gear and area restrictions. The OY allocation will place a ceiling on the proportion of OY that can be taken by any one gear type. As

discussed under Alternative 2, such an OY allocation will stabilize the sablefish fishery by preventing fluctuation in future share of harvests between gear types. When combined with gear areas, this alternative will also reduce the potential for gear conflicts between fishermen. The proposed phase-out of pot gear will eventually remove pots from the fishery, thereby eliminating most of the reported gear conflict and grounds preemption problems, and it will minimize the economic impact on pot fishermen by allowing them time to depreciate their existing investment and switch to another gear.

2. Establish Quotas and Areas in the Rockfish Fishery

Alternative 1 - Maintain a Gulfwide OY for other rockfish.

This alternative would maintain status quo in the other rockfish fishery. Other rockfish could be harvested anywhere in the Gulf of Alaska up to a total all-species OY of 5,000 mt.

Alternative 2 Set the Southeast District shelf demersal rockfish OY at 600mt between 56°N. latitude and 57°30'N. latitude with the remainder of the 5,000 mt OY (4,400 mt) to be taken elsewhere in the Gulf.

This alternative proposes establishing three districts within the Eastern Regulatory Area for purposes of managing other rockfish. As currently used for managing the sablefish fisheries, Southeast, East Yakutat and West Yakutat districts would be created (Figure 2). This alternative addresses the immediate management concern for the heavily exploited shelf demersal rockfish stocks in the northern southeast outer coastal area by placing a cap on the fishery at approximately the 1984 harvest level.

Alternative 3 - Set the Southeast District shelf demersal rockfish OY at 600 mt between 56°N latitude and 57°30'N. latitude and set the OY for the pelagic and slope rockfish species within the Southeast-East Yakutat District at 880 mt for a combined other rockfish OY of 1,480 mt. The remaining 3,520 mt of the other rockfish resource would be harvested from the other areas of the Gulf. (Recommended by the Alaska Board of Fisheries).

(a) Change the accounting year to October 1 through September 30 as part of this alternative (Board recommendation).

(b) Retain January 1 - December 31 as the accounting year.

Alternative 3 addresses the immediate management concern for the heavily fished southeastern outercoastal stocks and sets the total OY for other rockfish in the Southeast District at 1480 mt further minimizing the risk of overharvest in that area. In addition option (a) presents the Board recommendation to provide a fall and winter fishery.

Alternative 4 - Set the shelf demersal rockfish OY at 600 mt for the area where the 1984 domestic fishery was concentrated and establish separate OYs for slope, shelf pelagic, and shelf demersal rockfish species groups by Gulf of Alaska management area based on the best available data.

This alternative addresses the need for immediate management action in the Southeastern area. It would also provide the lowest risk of overharvesting

any one component of the rockfish stock by establishing separate OYs for the various species groups and management areas.

Alternative 5 - Set the OY for shelf demersal rockfish at 600 mt between 56°N. latitude and 57°30'N. latitude. Subtract this amount from the Gulfwide OY of 5,000 mt and apportion the remaining 4400 mt by regulatory area as follows: Southeast-East Yakutat, 880 mt, West Yakutat, 880 mt, Central Gulf, 1,760 mt, and Western Gulf, 880 mt.

This alternative sets OY levels for other rockfish by regulatory area throughout the Gulf using a simple division of the established OY of 5,000 mt less the 600 mt OY for Southeastern into the five INPFC areas that make up the Gulf of Alaska regulatory districts (Figure 2).

Alternative 6 - Redefine the "other rockfish" category in the Southeast Outside District to exclude shelf rockfish, thereby removing shelf rockfish from federal management under the FMP.

When the FMP was developed initially, the twelve species of shelf rockfish identified in Table 1 including six species of demersal and six species of pelagic rockfish were not considered when the "other rockfish" category was included in the management unit. Under this alternative, the Council would recommend to the Secretary that demersal shelf rockfish are not in need of federal management. Responsibility for their management would return to the State of Alaska. The OY for "other rockfish" would continue to be specified for slope and pelagic rockfish species and would be set at the current Gulfwide amount of 5,000 mt or be apportioned according to one of the alternatives described above.

3. Implement new optimum yields for pollock, Pacific ocean perch, Other rockfish, Atka mackerel, and other species.

Certain alternatives for the OY changes for each species, including the preferred action, have been considered and are hereby addressed as follows:

A. Pollock

Alternative 1 = preferred action. Reduce the optimum yield for pollock to 305,000 mt in the Western/Central Area.

This alternative is preferred, because it recognizes the apparent weakness of the 1980 and 1981 year classes and that the 1985 harvest will likely be dependent on the 1978 and 1979 year classes, which are been in the fishery for four and three years, respectively.

Alternative 2 - Maintain the optimum yield at 400,000 mt.

This alternative is not acceptable, because over-exploitation of old and weak year classes would likely result.

B. Pacific ocean perch

Alternative 1 = preferred action. Reduce the optimum yield for POP to 1,302 mt and 3,906 mt in the Western and Central Areas, respectively.

This is the preferred action, because it is less constraining to developing domestic fisheries while at the same time does allow for some rebuilding of stocks.

Alternative 2 - Maintain the optimum yields for POP at their existing levels.

This alternative would likely result in a continued decline in the condition of POP stocks and therefore is not acceptable.

C. Other Rockfish

Alternative 1 = preferred action. Reduce the Gulf of Alaska-wide optimum yield for rockfish to 5,000 mt.

This alternative is preferred, because it accommodates some growth in small rockfish fisheries in the Central Regulatory Area, while accounting for the poor condition of stocks generally throughout the Gulf of Alaska.

Alternative 2 - Reduce the optimum yield to an amount that would provide for a bycatch only to support other target fisheries.

The total incidental catch of rockfish in 1984 was approximately 700 mt. To set the OY at this level in 1985 as a bycatch amount would severely constrain developing target rockfish fisheries in the Eastern and Central Regulatory Areas. This alternative, therefore, is unacceptable.

Alternative 3 - Maintain the optimum yield at 7,600 mt.

This alternative grossly exceeds the 1982-1984 average harvest of 1,500 mt which currently represents the best estimate of EY for incidental slope rockfish. There is no evidence that a 7,600 mt harvest can be sustained even with the developing shelf rockfish fisheries.

D. Atka mackerel

Alternative 1 = preferred action. Reduce the OYs in the Central and Eastern Areas to bycatch amounts only, or 500 mt and 100 mt, respectively. This alternative is preferred, because it reflects the current availability of stocks that is based on the best available information.

Alternative 2 - Maintain the OYs in the Western and Central areas at their current values of 20,836 mt and 3,186 mt, respectively.

This status quo alternative sets OYs equal to amounts that are not available for harvest, according to preliminary results of the 1984 triennial survey.

E. Other species

Alternative 1 = preferred action. The other species OY is set equal to 5% of the total OYs for each of the other groundfish categories on the basis of an equation contained in the FMP. This is the only viable alternative under the current FMP.

4. Establish a Reporting System for Catcher/Processors

Alternative 1 - Maintain the current reporting requirements.

With the present system catches are reported on ADF&G fish tickets at the time of landing.

Alternative 2 - Require an FCZ processing permit with check-in/check-out and weekly catch reporting.

Under this alternative, catcher/processor and mothership/processor vessels would be required to obtain an FCZ processing permit. These catcher/processor and mothership/processor vessels would be required to notify NMFS via U.S. Coast Guard radio each time they entered or left an FMP management area. Catcher/processor and mothership/processor vessel operators or their representatives would also be required to submit a report to NMFS by U.S. mail or telex for each fishing week documenting the hail weight estimates of catch by FMP species group in each FMP area. These weekly reports would be due within 7 days of the end of the fishing week. ADF&G fish tickets would continue to be required to be submitted within one week of the date of landing to document more precise catch or product weights and specific ADF&G statistical areas. A completed logbook may be submitted with the ADF&G fish ticket showing total catch by species for a trip as a means of documenting catch by specific ADF&G statistical area.

Alternative 3 - Require an FCZ processing permit with a weekly catch report, but without check-in/check-out reporting.

Under this alternative, catcher/processor and mothership/processor vessels would be required to obtain an FCZ processing permit. These catcher/processor and mothership/processor vessel operators or their representatives would be required to submit a report to NMFS by U.S. mail or telex for each fishing week documenting the hail weight estimates of catch by FMP species group in each FMP area. These weekly reports would be due within 7 days of the end of the fishing week. ADF&G fish tickets would continue to be required to be submitted within one week of the date of landing to document more precise catch or product weights and specific ADF&G statistical areas. A completed logbook may be submitted with the ADF&G fish ticket showing total catch by species for a trip as a means of documenting catch by specific ADF&G statistical area.

Alternative 4 - Place observers aboard a portion of the catcher/processor and mothership/processor vessels and extrapolate the catch from these vessels to the entire fleet.

Under this alternative, catcher/processor and mothership/processor vessels would be required to obtain an FCZ processing permit which would require that observers be allowed onboard if requested. These catcher/processor and mothership/processor vessels would be required to notify NMFS via U.S. Coast

Guard radio each time they entered or left an FMP management area. Observers would be placed aboard a portion of the catcher/processor and mothership/processor vessels. Radio reports of catch from the observed sample would be extrapolated to all vessels in each management area. ADF&G fish tickets would continue to be required to be submitted within one week of the date of landing to document more precise catch or product weights and specific ADF&G statistical areas. A completed logbook may be submitted with the ADF&G fish ticket showing total catch by species for a trip as a means of documenting catch by specific ADF&G statistical area.

Alternative 5 - Place observers aboard all catcher/processor and mothership/processor vessels.

Require catcher/processor and mothership/processor vessels to obtain an FCZ processing permit which would require that an observer be aboard at all times. Total catch would be computed directly from observer radio reports.

5. Establish Measures to Control the Pacific Halibut Bycatch

Each regulatory alternative for controlling halibut bycatch in trawl fisheries consists of a unique combination of a large number of regulatory elements or options. For example, PSC limits can be stated in terms of numbers or metric tons of halibut; the PSC limits can be in effect for part of the year or the entire year; some fisheries can be exempt from the PSC limits; the limits can be held in common or allocated to individual fisheries or operations; the sanctions imposed when a limit is reached can include a closure, gear restrictions, the imposition of bycatch fees, or merely a request that efforts be taken to control bycatch; and PSC limits or other mechanisms to encourage trawl fleets to control bycatch can be used. A more complete list of these elements and a qualitative evaluation of them is presented by Terry (1984, 1985). The alternatives presented below are specific combinations of these regulatory elements or options. The alternatives are:

Alternative 1 - Maintain the Western and Central Gulf PSC limits of 29 mt and 52 mt, respectively (status quo).

This alternative is defined by the following set of regulatory elements.

- (a) PSC limits of 29 mt and 52 mt of halibut for the Western and Central Areas, respectively, are specified in the FMP.
- (b) The PSC limits are in effect six months each year, December 1 through May 31.
- (c) The PSC limits apply to all domestic trawlers (i.e., domestic trawlers in both wholly domestic and joint venture operations).
- (d) Separate PSC allocations are not made by individual fishery or operation.
- (e) All further domestic trawling is prohibited in an area until June 1 once the PSC is taken.

Alternative 2 - Raise the Western and Central Gulf PSC limits to 270 mt and 768 mt, respectively (currently implemented by emergency rule).

As noted Section III, the FMP and the emergency rule for 1984 and 1985 set PSC limits for all domestic trawlers but only the bycatch of joint ventures is

monitored. To account for this problem, this alternative includes an option with respect to the level of the PSC limits. The option proposes a PSC limit based on the observed joint venture bycatch of halibut in 1984. This alternative can, therefore, be considered as two separate alternatives or as one with a suboption. This alternative is defined by the following set of regulatory elements with the suboption defined by element a'.

- (a) PSC limits of 270 mt and 768 mt of halibut for the Western and Central Areas, respectively, are specified in the FMP.
- (a') PSC limits of 120 mt and 330 mt of halibut for the Western and Central Areas, respectively, are specified in the FMP.
- (b) The PSC limits are in effect six months each year, December 1 through May 31.
- (c) The PSC limits apply to all domestic trawlers (i.e., domestic trawlers in both wholly domestic and joint venture operations).
- (d) Separate PSC allocations are not made by individual fishery or operation.
- (e) All further on-bottom domestic trawling is prohibited in an area until June 1 once the PSC limit is taken; however, further off-bottom domestic trawling is permitted.

Alternative 3 - Develop a framework procedure for the annual adjustment of PSC limits.

Two versions of alternative 3 are defined below as two sets of regulatory elements. The differences are in terms of the number of elements that are frameworked and the allocation of PSC limits among fisheries.

- (a) The FMP specifies the procedure that will be used to annually determine and make inseason adjustments to the PSC limits for the Western, Central, and Eastern Areas. The limits are specified in terms of metric tons of bycatch.
- (b) The PSC limits are in effect 12 months each year (i.e., they are in effect all year).
- (c) In each area there are separate PSC limits for wholly domestic, joint venture, and foreign fisheries and a procedure is specified for changing the number of PSC limits per area as the fisheries change or as new information becomes available.
- (d) Further on-bottom trawling during a year is prohibited in a fishery and area once a fishery takes its PSC limit in that area.
- (e) The FMP specifies a procedure to be used to change the types of operations that may continue to fish once a PSC limit is taken and to impose alternative sanctions for selected types of operations.

Possible modifications to this alternative are outlined below. These modifications are for a subset of the elements of alternative 3 and are presented using the reference letters used above.

- (a') A method for changing the areas for which PSC limits are established is specified in the FMP.
- (c') The method that will be used to make the initial and supplemental allocations will be determined by procedures specified in the FMP. PSC allocations may be made to individual operations.

The procedures referred to above are presented below using the same reference letters. Note that not all of the elements require a procedure and that the reference letters a' and c' are for the second or modified version of Alternative 3.

(a) Procedure for Setting and Adjusting PSC Limits

The halibut PSC limit for each fishery and area will be determined by the Alaska Regional Director of NMFS by the end of the preceding fishing year. Prior to the Regional Director's determination, the Council will recommend to him halibut PSC limits for each fishery and area based on the best available information concerning the affected stocks and fisheries. The Regional Director will make these recommendations and supporting information available to the public for comment. If the Council does not recommend PSC limits by December 15, the PSC limits already established shall automatically constitute the Council's recommendations to the Regional Director.

The Council's recommendations will be based on the following types of information:

1. estimated bycatch in years prior to that for which PSC limits are being set,
2. expected change in groundfish catch,
3. estimated change in groundfish biomass,
4. estimated change in halibut biomass and stock condition,
5. potential impact on halibut stocks,
6. potential impacts on domestic halibut fishery,
7. methods available to reduce bycatch,
8. the cost of reducing bycatch, and
9. other biological and socioeconomic factors that affect the appropriateness of specific PSC limits in terms of FMP objectives.

For example, the 1984 halibut bycatch in the joint venture fisheries was 141 mt in the Western Area and 431 mt in the Central Area; therefore, if after reviewing the above factors the Council determines that a 25% increase in bycatch is appropriate, it would recommend that the joint venture be set at 176 mt and 539 mt, respectively for the two areas.

The Regional Director may change the PSC limits during the year for which they were set, if as new information becomes available, it is apparent to him that his initial determination has become inappropriate with respect to meeting FMP objectives. The Council may recommend such inseason changes based on new information.

(c) Procedure for Changing the Number of PSC Limits for Each Area

The number of halibut PSC limits for each area will be determined by the Alaska Regional Director of NMFS by the end of the preceding fishing year. Prior to the Regional Director's determination, the Council will recommend to him the number of halibut PSC limits for each area based on the best available information concerning the affected stocks and fisheries. The Regional Director will make these recommendations and supporting information available to the public for comment. If the Council does not recommend numbers of PSC limits by December 15, the number of PSC limits already established shall

automatically constitute the Council's recommendations to the Regional Director.

The Council's recommendations will be based on the types of information listed above and additional information as appropriate to meet the FMP objectives.

The Regional Director has the same authority to change the number of PSC limits inseason as he has to change the PSC limits.

(e) Procedure for Changing the Sanctions to be Imposed Once a PSC Limit is Taken

The procedure for changing the sanctions to be imposed once a PSC limit is taken are similar to those for setting both the PSC limits and the number of limits per area; and as with either of these two aspects of PSC regulations, the Regional Director may make inseason changes.

(a') Procedure for Changing the Areas for which PSCs are Defined

The procedure will be similar to that presented above for determining the other aspects of PSC regulations and the Regional Director will have correspondingly similar authority to make inseason changes.

(c') Procedure for Determining Initial Annual and Supplemental Allocations to Individual Operations

The method of allocation will be determined by the Regional Director by the end of the preceding fishing year. Prior to the Regional Director's determination, the Council will recommend to him a method of allocating halibut PSC limits for each fishery and area based on the best available information concerning the appropriateness of alternative methods with respect to the FMP objectives. The Regional Director will make these recommendations and supporting information available to the public for comment. If the Council does not recommend an allocation method by December 15, the method already established shall automatically constitute the Council's recommendations to the Regional Director.

The method of allocation may include, but is not limited to, the following:

1. allocate based on historical and/or expected catch,
2. auction, or
3. sell at a predetermined price per unit of bycatch.

Alternative 4 - Establish bycatch fees.

Alternative 4 which includes the use of bycatch fees is defined by the following set of regulatory elements.

- (a) Bycatch fees would be imposed in terms of dollars per metric ton of halibut bycatch. The procedure used to annually set the fees is specified in the FMP.
- (b) Fees would be applicable to all fleets for which bycatch is adequately monitored.

- (c) A procedure is specified in the FMP for imposing alternative bycatch control regulations for fisheries in which adequate monitoring is not available.

The procedures referred to in elements a and c are presented below.

(a) Procedure for Determining Bycatch Fees

The halibut bycatch fee for each fishery and area will be determined by the Alaska Regional Director of NMFS by the end of the preceding fishing year. Prior to the Regional Director's determination, the Council will recommend to him a halibut bycatch fee for each fishery and area based on the best available information concerning the affected stocks and fisheries. The Regional Director will make these recommendations and supporting information available to the public for comment. If the Council does not recommend bycatch fees by December 15, the bycatch fees already established shall automatically constitute the Council's recommendations to the Regional Director.

The Council's recommendations will be based on the following types of information:

1. estimated change in halibut biomass and stock condition,
2. potential impact on halibut stocks,
3. potential impacts on domestic halibut fishery,
4. methods available to reduce bycatch,
5. other biological and socioeconomic factors that affect the appropriateness of specific bycatch fees in terms of FMP objectives.

For example, based on an estimate of the potential impact of bycatch on the halibut fishery of approximately \$1,000 per metric ton, it may be determined that the appropriate fee is \$1,000 per metric ton. In the 1985 Shelikof Strait joint venture pollock fishery which took 0.5 mt of halibut in a 221,000 mt fishery, a fee of \$1,000 per ton would have increased the harvesting costs by \$0.002 per ton of groundfish. For a fishery with a bycatch rate of one percent, this bycatch fee would increase the harvesting cost by \$10 per ton of groundfish if no actions were taken to reduce the bycatch rate.

The Regional Director may change the bycatch fees during the year for which they were set if as new information becomes available it is apparent to him that his initial determination has become inappropriate with respect to meeting FMP objectives. The Council may recommend such inseason changes based on new information.

(c) Procedure for Determining Alternative Bycatch Regulations for Fisheries with Inadequate Bycatch Monitoring

The control of bycatch in fisheries for which bycatch is not well monitored require a separate set of regulations. The halibut PSC regulations for such fisheries will be determined by the Alaska Regional Director of NMFS by the end of the preceding fishing year. Prior to the Regional Director's determination, the Council will recommend to him halibut PSC regulations for such fisheries based on the best available information concerning the affected

stocks and fisheries. The Regional Director will make these recommendations and supporting information available to the public for comment. If the Council does not recommend PSC regulations by December 15, the PSC regulations already established shall automatically constitute the Council's recommendations to the Regional Director.

The Council's recommendations will be based on the following types of information:

1. estimated bycatch in years prior to that for which PSC limits are being set,
2. expected change in groundfish catch,
3. estimated change in groundfish biomass,
4. estimated change in halibut biomass and stock condition,
5. potential impact on halibut stocks,
6. potential impacts on domestic halibut fishery,
7. methods available to reduce bycatch,
8. the cost of reducing bycatch,
9. the cost effectiveness of onboard observers in such fisheries,
10. other biological and socioeconomic factors that affect the appropriateness of specific PSC regulations in terms of FMP objectives.

Examples of the regulations include, but are not limited to, the following:

1. Improved monitoring methods can be implemented.
2. Gear, time, and/or area restrictions can be imposed.
3. Fleets may be requested to use voluntary measures.

6. Implement the NMFS Habitat Policy

Alternative 1 - Amend the FMP to address habitat considerations, based on the best available information, to meet standards set forth in the National Marine Fisheries Service's Habitat Conservation Policy.

This alternative focuses, within the FMP, on habitat as the source of productivity of a fishery and demonstrates Council awareness of potential adverse and cumulative effects of man-induced habitat alterations on the health and size of the harvest. It would provide legal foundation for future Council expressions of concern and action should the need arise, and would provide the Secretary with a basis for implementing appropriate Council habitat recommendations to the extent possible within legal and budget limitations.

Alternative 2 - Amend the FMP to add a general habitat conservation objective. However, the more detailed material that is under the Alternative 1 proposed amendment would be included in a separate Council Habitat Document that would be referenced in, but not part of, the FMP.

This alternative would issue the amendment text as a Council Habitat Document separate from, but referenced in, the FMP. Not subject to Secretarial approval, it would provide essentially the same information without the need for FMP amendment should the information change. Whether future Council

action based on information published separately from the FMP would have the same legal effect is uncertain and is being evaluated.

Alternative 3 - Do not amend the FMP to address habitat considerations.

Under this alternative, the FMP would not be responsive to the NMFS Habitat Conservation Policy.

7. Sablefish Fishing Seasons

Alternative 1 - Maintain the current sablefish fishing season of January 1 through December 31 or until closed by field order (status quo).

This alternative would maintain the status quo and open the sablefish fishery with all other groundfish fisheries in the Fishery Conservation Zone.

Alternative 2 - Change the opening date of the sablefish fishery in the Southeast and East Yakutat Districts from January 1 to March 15.

This alternative is being requested by Southeast Alaska fishermen and processors. A later opening is considered more desirable given the fish quality problems associated with spawning and the increased dangers to vessel and crew when fishing in this area during the winter. A March 15 opening would also bring the federal season into conformity with the State for most of this area.

Alternative 3 - Change the opening dates of the Southeast - East Yakutat and Central area sablefish fisheries to March 15 and May 1, respectively.

This alternative is similar to Alternative 2 and would meet the request of Southeast Alaska fishermen and processors. It differs from the above alternatives by delaying the opening date in the Central Regulatory Area from January 1 to May 1. A later opening in this area is being considered due to reports of poor fish quality and bad weather in the area during the winter and early spring months.

Alternative 4 - Change the opening date of the pot and hook and longline sablefish fishery to April 1 in all regulatory areas.

This alternative differs from Alternatives 1 through 3 by setting an April 1 opening date in all regulatory areas. As with Alternatives 2 and 3, an April 1 season opening will provide all the advantages previously described but with the additional advantage of concurrent openings Gulfwide, thereby encouraging a more even distribution of fishing effort. The legal season opening for trawl gear in the fishery would remain at January 1 since trawl operations on other groundfish species normally begin at that time of the year and sablefish are caught incidentally to those fisheries.

IV. ENVIRONMENTAL IMPACTS OF THE AMENDMENT PROPOSALS AND THEIR ALTERNATIVES

Environmental impacts on the quality of the human environment are categorized as physical, biological, and socioeconomic. The socioeconomic analysis is presented under the Initial Regulatory Impact Review/Initial Regulatory

Flexibility Analysis prepared for Amendment 14. The remaining physical and biological impacts are discussed as follows:

1. Establish a Gear and/or Area Restriction in the Sablefish Fishery

Since pots, longline and gillnets are fixed gear types, only moving generally up and down when set and retrieved, impacts on the physical environment are thought to be insignificant and likely immeasurable above natural physical perturbations. However, pots lost during fishing operations become a part of the bottom substrata and may impact the benthic environment. Trawl gear is a moving gear type and is almost always in contact with the bottom when used to harvest sablefish. A trawl net dragged in this manner will disturb the benthos by mixing sediment and water. However, with trawl fishing on sablefish being nearly non-existent in the Gulf of Alaska at the present time, physical impacts attributed to directed sablefish trawl and fixed gear is considered insignificant.

The biological impacts are categorized as changes in predator-prey relationships among invertebrate and vertebrates, changes in status of marine mammals and birds, and nutrient changes due to processing and dumping of fresh wastes. Biological impacts of a continued harvest will not be measurably different from those of previous years. U.S. fishermen are expected to take an amount of sablefish equal to the optimum yields regardless of the type of gear used. No changes, therefore, in predator-prey relationships or in the status of marine mammals and birds will occur under any of the discussed alternatives with the exception that a hook and longline only restriction would remove from use trawl gear, a gear that is most productive on the continental shelf where larger concentrations of small sablefish are found. An increase in use of this gear type could effect the proportion of juvenile sablefish to the remaining sablefish population. Trawl gear is also associated with high incidental catches of other species including halibut, Pacific cod, and rockfish. While longline and pot gear will also catch a variety of species, the amounts will be small. There currently is insufficient data to assess the full impact of incidental catches of other groundfish species.

Longline, pots and gillnets are usually fished on the edge or slope of the continental shelf where concentrations of larger more marketable fish can be found. Since these three forms of fixed gear can be designed to select for larger fish and are fished on the same grounds where the optimum yield is currently taken, no significant change to predator-prey relationships beyond the status quo is to be expected. No substantial nutrient changes will occur, because all caught sablefish are treated similarly when brought on board the catcher vessels (i.e., they undergo some degree of primary processing before icing or freezing). No differences in amounts of fish wastes entering the marine system will exist. The small number of sablefish pots which are lost during fishing operations, will continue to fish until the biodegradable panel required on each by regulation deteriorates to release those fish that enter them. No data exist to quantify such fishing mortality, but it is not believed to be significant due to the low level of fishing effort with pot gear at this time. However, impacts of lost pot gear on the environment would increase proportional to the extent of pot use in the fishery.

2. Establish Rockfish Quotas and Management Areas

Any decrease in optimum yield is normally expected to result in a reduction of harvest which could have a beneficial impact on the biological and physical environment by resulting in less potential physical disruption of the ecosystem. However, in the case of the five alternatives presented in the other rockfish category, actual harvest is not expected to decline regardless of the Council action and the selection of a preferred alternative.

In any of the alternatives, the other rockfish harvest could increase from the 1984 level of 1,500 mt to a Gulfwide harvest of 5,000 mt. The impact of that increase on the biological and physical environment would be largely dependent on the type of gear utilized and the distribution of effort. Currently other rockfish are harvested in the Central and Western Gulf areas by trawl gear incidental to target fisheries for other species and in the Eastern Gulf by a rapidly expanding target longline fishery. Attempts at target rockfish trawl fisheries have so far proven unsuccessful but could be a major consideration in the future.

The biological and physical impacts of the rockfish fishery are not fully understood. Trophic interaction of rockfish with other species and dependence of other species on rockfish for food are just beginning to be explored. Perhaps the greatest potential risk is the impact of overharvest on the rockfish stocks themselves. On-bottom trawl gear may result in some short term damage to the benthic environment. The longterm effect is likely to be a function of the type of gear, the duration of the effort and the area fished. Data is not currently available that would allow potential impact to be quantified. Longline gear is set and retrieved vertically through the water column rather than drag across the bottom and therefore impacts on the environment are thought to be insignificant. Both gear types catch and kill other non-target species to varying degrees, but accurate data is not available. The five alternatives presented would vary the degree of potential impact.

Under Alternative 1 all harvest of other rockfish up to a Gulf wide OY of 5,000 mt could be taken by any gear type in any area of the Gulf. This could have a negative impact on the rockfish stocks as well as an impact on distribution and abundance of marine mammals, sea birds, and other marine animals that may rely on adult or juvenile rockfish for food. As mentioned above, the extent of dependence if any is not known. Concentrated on bottom trawl effort could have a short term impact on the benthic environment.

Alternative 2 would result in no change to the environment in the area described for the 600 mt OY since the harvest would remain at the 1984 level. However, the potential impacts discussed in alternative A could occur in the remaining areas of the Gulf.

Alternative 3 would minimize potential environmental changes in the Southeastern Gulf, but impacts as a result of concentrated effort could occur in the remaining areas.

Alternative 4 would distribute the effort throughout the Gulf based on abundance of rockfish by species assemblage. Of the five alternatives this one

would result in the least potential environmental impact. The distribution of fishing effort would be directly tied to the availability of the resource.

Alternative 5 would also distribute the effort throughout the Gulf, however the extent of fishing effort and the resulting environmental impact would not necessarily be proportional to resource abundance.

Under Alternative 6, the state would be the sole manager of shelf demersal rockfish in the Southeast Outside District. The state currently is the only agency that is monitoring the status of demersal shelf rockfish stocks and which has an existing management program to monitor the progress of the fishery at ports of landing. Hence, under this alternative, results of ongoing state management of demersal shelf rockfish could be reviewed to determine whether any additional conservation and management under an FMP is necessary or could even be realized given current budget constraints imposed on the federal government. No significant biological or physical impacts are expected under this alternative. A uniform management regime by the State is expected. To the extent that the state would be able to optionally manage stocks under a single management regime could prove to be a net positive impact on the well being of those stocks due to the greater extent of management flexibility under the state system. However, it should be noted that at the current level of funding, the State may not have the resources needed to adequately monitor and manage this fishery independently. Luck of adequate management could lead to a negative impact on rockfish stocks.

More detailed information on the impacts of fisheries on the environment is included in Section IV. 3.

3. Implement New Optimum yields for pollock, Pacific ocean perch, Other rockfish, Atka mackerel, and other species

A. Implement new optimum yields as described under Alternative 1 for each of the above species.

Any increases or decreases in optimum yields are expected to have certain impacts on the biological and physical environment. These impacts are categorized as changes in predator-prey relations among invertebrate and vertebrates, changes in status of marine mammals and birds, physical changes as a direct result of on-bottom fishing practices, and nutrient changes due to processing and dumping of fish wastes. All such impacts could be cause to varying degrees by taking of any amount of fish, but this analysis is limited primarily to discussion concerning impacts of the reduction of the pollock optimum yield. These impacts are discussed as follows:

Stress to Marine Mammals

In general, changes in optimum yields are calculated to account for amounts of fish consumed by marine mammals. On the other hand, certain conflicts occur between marine mammals and fishermen as a result of both "predators" being on the same grounds, sometimes in direct competition with each other. Twenty-six species of marine mammals permanently reside in or seasonally frequent the Gulf of Alaska. Many species occur in large numbers each spring and summer, but are few in number during the winter.

Except for northern fur seals, the pinniped species that are found in the Gulf of Alaska are all protected by the Marine Mammal Protection Act of 1972 (MMPA). Northern fur seals are protected under the Fur Seal Act of 1966. Except for fur seals, all species are believed to be at their level of optimum sustainable population as defined under the MMPA. Fur seals are currently at reduced levels of abundance for reasons not well understood, but which are likely related to heavy infestations of endoparasites and other diseases. Potential losses due to entanglement with fishing gear is also being examined. Permits for their taking of all marine mammals, however, may be issued under carefully limited circumstances. Because groundfish trawl operations generally do involve conflict with pinnipeds, domestic and foreign fishermen proposing to engage in such operations must obtain certificates of inclusion under a general permit for the taking of marine mammals incidental to commercial trawling operations. Under the general permit not more than 1,000 northern sea lions (Eumetopias jubatus), 10 northern fur seals (Callorhinus ursinus), 10 harbor seals (Phoca vitulina), and 10 small cetaceans may be killed or seriously injured annually by domestic trawl operations off Alaska. The incidental taking of pinnipeds in the groundfish fisheries is a significant problem only with respect to northern sea lions. While these sea lions may avoid areas of conspicuous human activity, they do tend to congregate around commercial groundfish operations and are caught in the moving trawls. They also have been known to damage fishing gear and the catch before it can be taken aboard a fishing vessel. Such activities by sea lions can result in defensive action by the affected fishermen who may harm or harass them in an attempt to keep them away from their gear.

The effect on sea lions as a result of the 1985 joint venture fishery should be similar to that in 1984, because the size of the 1984 joint venture harvest (200,000 mt), is about equal to that part of the new joint venture allocation (212,500 mt) of the optimum yield. Sea lion mortality from the 1984 pollock joint venture fishery in Shelikof Strait was well within the limits provided by the Certificates of Inclusion. A total of 254 sea lions were reportedly taken during this fishery. A total of 80 sea lions were reportedly taken in the foreign fishery. U.S. fishermen now have three years of experience in this fishery and are mostly familiar with the protection afforded sea lions. Because sea lions are usually highly visible during daytime, fishermen are able to avoid them while trawling, thus minimizing confrontations. Observations by the National Marine Fisheries Service suggest, however, that trawling conducted during periods of darkness is likely to increase encounters with sea lions. Potential methods to reduce such encounters include: (1) scheduling fishing operations to reduce or eliminate the need to trawl during periods of darkness; and (2) adopting certain technical devices, eg. noise emitters, that would repel sea lions in the vicinity of the a trawl. Fishermen should be encouraged continually to consider and adopt such measures to mitigate the effect of their operations on sea lions in order to enjoy fishing activities without additional measures that could be imposed on them under the Marine Mammal Act.

Stress to Marine Birds

Harvesting operations during the groundfish fisheries may cause marine birds, including those protected by the Migratory Bird Treaty Act, to avoid areas that they might otherwise frequent. Such displacement of these birds would not appear to be a prohibited taking for purposes of the Migratory Bird Treaty

Act, but its long-term effect on them is largely unknown. Birds protected under this act could theoretically be captured in trawl gear in the course of their feeding activities. Any such capture that is intentional or negligently caused by fishermen would be a violation of this Act.

Food Competition with Marine Mammals and Birds

Many of the marine mammals and birds that occur in the Gulf of Alaska feed on juvenile and adult groundfish and also on the same animals that the groundfish feed on. Because the groundfish stocks themselves are declining, harvesting a reduced amount of groundfish is not anticipated to result in a surplus of fish in the system that marine mammals and birds could then consume. Theoretically, these reductions in allowable levels of harvest should have a zero net effect on the ecosystem; in reality, predator/prey relationships are not well understood and any resulting changes are not possible to measure against natural perturbations in the ecosystem, given the existing technology to measure them.

Physical changes As a Direct Result Of On-bottom Fishing Practices

Depending on the species, changes in OYs could entail certain combinations of trawls (on-bottom and midwater), longlines, pots, and gillnets. Only the bottom trawl has been identified as a gear type that impacts the bottom. It may cause abrasion of the bottom as it is pulled along, killing or injuring any animals and plant life that may have been in its path. Most bottom trawls are also equipped with rollers, or bobbins, that protect the trawl from damage, but which may also kill or injure animals and plant life. The actual severity of such impacts are not known, but are largely believed to be insignificant over the long term providing that the impact is periodic because of capacity of the ecosystem to repair itself.

Under this alternative, the total available harvest of groundfish will be decreased by more than 100,000 mt. Because most of this amount is attributed to the decrease in the pollock OY, no change in physical impacts are expected, because most of the pollock harvest is currently conducted with off-bottom gear. This fishing method would rarely come into contact with the bottom, and any physical changes would be immeasurable.

Nutrient Changes Due to Processing and Dumping Fish Wastes

Increases and decreases in OYs will change amounts of fish wastes that are discarded at sea. Processes of change in the ocean are dynamic given the biological and physical interactions that occur. An assessment of the true effects caused as a result of changes are not quantifiable given present technology.

- B. Maintain the current optimum yields as described under Alternative 2 for each of the above species.

Stress to Marine Mammals and Birds

Under this alternative, more than 100,000 mt of groundfish could be made available for harvest than in Alternative A. Because the food requirements of marine mammals and birds are factored into the calculations of OYs, the amount

being made to the fishery must come partly from the amounts required by marine mammals and birds. If the additional amounts of groundfish were actually harvested, then some adverse impacts must occur on marine mammals and birds through additional harassment or mortality. Whether these impacts would prove deleterious to them is not known. Certain substitutions in prey needed by marine mammals and birds might occur. Likely, however, adverse impacts would accelerate as excess removals of groundfish biomass caused groundfish species to decline in status.

Food Competition with Marine Mammals and Birds

As discussed above for Alternative 1, certain interspecific competition must occur among marine mammals, birds, and fishermen. Harvesting the current specified OYs when the best available information indicates insufficient biomass to support such harvests would cause changes in predator/prey relationships. Fewer large fish would remain in the system to prey on smaller fish etc. Marine mammals may have to forage further than normal. On the other hand, more small organisms may be available to birds and mammals as a result of their not being consumed by larger fish. Again, predator/prey relationships are not well understood and any resulting changes are largely not measurable.

4. Establish a Reporting System for Catcher/Processors

The primary effects imposed upon the biological and physical environment by the catcher/processor reporting alternatives result from the varying potential for overfishing under each alternative. Both targeted groundfish species and non-targeted incidental or prohibited species could be overfished by catcher/processor and mothership/processor vessels. Since many of the groundfish species concerned are slow growing and long-lived, overharvesting can have considerable impacts on future population levels and production of the targeted groundfish species. Similar effects on population levels and production are possible for incidental and prohibited species catches by these vessels. In addition, considerable socioeconomic impacts on catches by other user groups could result from excessive harvests of prohibited species by catcher/processors, particularly for crab, salmon and halibut. Secondary biological impacts of overharvests would result from changes in trophic interactions caused by the altered population levels of the overfished species.

The potential for resource depletion through overfishing results from the large hold capacities of the catcher/processor and mothership/processor vessels and the potential for these vessels to remain at sea for long periods of time. Under Alternative 1, fishery managers have no knowledge of the catch aboard these vessels until the time of landing. By the time these vessels land, OYs and possible PSC levels could have been greatly exceeded by the aggregate catch aboard the catcher/processor vessels and shore-based domestic vessels. Alternative 2 would greatly reduce the risk of overfishing of targeted groundfish species by requiring weekly catch reports from the catcher/processor and mothership/processor vessels. In addition, this alternative requires vessels to check-in and check-out of each management area fished. This requirement increases the compliance and enforceability of this alternative, further reducing the risk of overfishing. Alternative 3 would

require only the weekly catch report, with a somewhat larger risk of overfishing of targeted groundfish species, because of reduced compliance and enforceability. The risk of overfishing is also increased under alternative 3 because the precision of catch estimates is reduced. This results from catch projections for the most recent two week reporting period being based on a two week old effort distribution provided by the preceding catch report, rather than basing the effort distribution on current information from the check-in/check-out system. The onboard observer catch reporting of alternatives 4 and 5 provide the least risk of overfishing targeted groundfish species. Observer based catch reporting provides the only reduction of the risk of overfishing prohibited species catches of the alternatives.

5. Establish Measures to Control the Pacific Halibut Bycatch

Each of the alternatives will affect the biological and physical environment to varying degrees. These impacts are related to changes resulting from removing different numbers of halibut and other bottom organisms and from perturbations of the benthos caused by trawls being dragged along the bottom. Halibut are important predators. Larval halibut feed on plankton, whereas halibut one to three years old, that usually are less than 30 cm long, feed on shrimp-like organisms and small fish. As halibut increase in size, fish and crabs become a more important part of the diet. The species of fish frequently observed in stomachs of large halibut include Pacific cod, pollock, sculpins, sandlance and herring. Octopus and clams also contribute to their diet.

The effect of changes in the amounts of halibut that are taken by domestic groundfish fishermen also depends on halibut management measures undertaken by the International Pacific Halibut Commission (IPHC). If the incidental catch can instead be taken in the directed halibut fishery.

Under Alternative 1, very little bottom trawling would occur during December-May, and the incidental mortality of halibut, crab and other bottom organisms would be low during this period. A much larger catch would be allowed under Alternative 2. Neither Alternative 1 or 2 has any affect on the halibut and crab catch during the remainder of the year (June-November) and thus the total environmental impact of the groundfish fishery cannot be determined. Under Alternative 3, the total environmental impact would be specified according to the framework procedure and environmental factors would be considered in setting the PSC limit. This alternative proposes exemptions for vessels sorting halibut on deck. This exemption is based on the assumption that on-deck sorting will result in a higher survival rate of released halibut. This assumption is valid only if the sorting occurs immediately after the catch is brought aboard and would not be valid if cod ends are transferred or if the halibut are not immediately released. Enforcement of this alternative with the on-deck exemption may be difficult, leading to higher incidental catches of halibut and/or lower survival rates. As with Alternatives 1 and 2, the environmental impact of Alternative 4 cannot be determined.

6. Implement the NMFS Habitat Policy

This proposal is descriptive in nature, focusing on the environment within which the product for harvest is generated and nurtured. It's purpose is to alert users of the marine environment to the elemental influence of habitat on

the productivity of the fishery and to the potential for alteration by man's actions. The intended effect is to provide the basis for a common awareness among these users and for appropriate expressions of Council concern should the need arise. Because this statement is informational only, there is no immediate environmental impact, although the residual effect of increased knowledge may serve, in the long-term, to protect, maintain, or restore the habitats of the Gulf of Alaska groundfish fishery. In the absence of such an amendment, the benefits of increased public awareness of habitat issues would be lost.

7. Sablefish Fishing Seasons

This amendment proposes delaying the opening of the sablefish fisheries in one or more areas for both biological and socioeconomic reasons. The primary biological rationale is that fish quality (i.e. soft belly, soft muscle texture, easy bruising, etc.) is dependent in part on time of year. Detailed biological information on spawning times for sablefish in the Gulf of Alaska is limited. In general it appears that these species reproduce during the winter and early spring months. This spawning period is shared by other groundfish species in the Gulf of Alaska. Harvesting on a spawning stock of fish has always been questionable. The biological impacts of such harvesting remains unknown. Given that sablefish is a low-OY species and that the existing fleet is capable of harvesting the OY at any time of the year in a relatively short period, consideration to spawning periods and the resulting fish quality to processors and the consumer is logical and should be pursued.

V. EFFECTS ON ENDANGERED SPECIES AND ON THE ALASKA COASTAL ZONE

None of the seven amendment proposals or their alternatives would constitute actions that "may affect" endangered species or their habitat within the meaning of the regulations implementing Section 7 of the Endangered Species Act of 1973. Thus, consultation procedures under Section 7 on the final actions and their alternatives will not be necessary.

Also, for the reasons discussed above, each of the management proposals, or their alternatives, would be conducted in a manner consistent, to the maximum extent practicable, with the Alaska Coastal Zone Management Program within the meaning of Section 307(c)(1) of the Coastal Zone Management Act of 1972 and its implementing regulations.

VI. FINDINGS OF NO SIGNIFICANT IMPACT

For the reasons discussed above, it is hereby determined that neither approval and implementation of any of the reasonable alternatives concerning the six topics presented would significantly affect the quality of the human environment, and that the preparation of an environmental impact statement on these actions is not required by Section 102(2)(C) of the National Environmental Policy Act or its implementing regulations.

Assistant Administrator for Fisheries, NOAA Date

CONSULTATION AND COORDINATION WITH OTHERS

The Gulf of Alaska Groundfish Plan Team consulted extensively with representatives of the Alaska Department of Fish and Game, National Marine Fisheries Service, members of the Scientific and Statistical Committee of the North Pacific Fishery Management Council, and members of the academic and industrial community.

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